

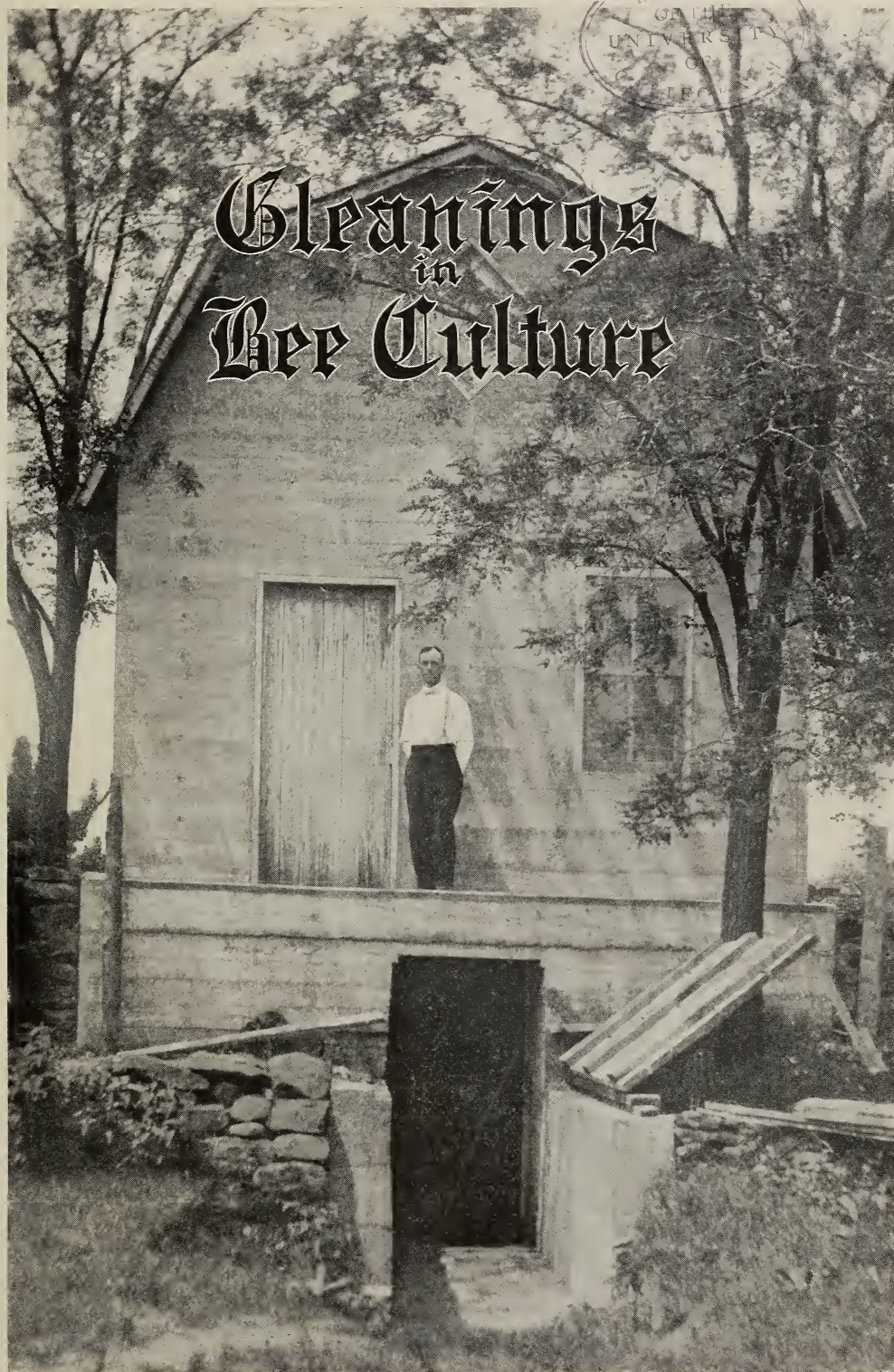
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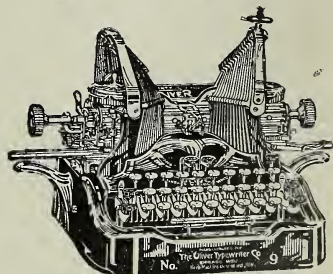


Gleanings in Bee Culture



A New Model Typewriter

The No. **9**
OLIVER
The Standard Visible Writer



BUY IT NOW!

Yes, the crowning typewriter triumph is here!

It is just out—and comes years before experts expected it. For makers have striven a life-time to attain this ideal machine. And Oliver has won again, as we scored when we gave the world its first visible writing.

There is truly no other typewriter on earth like this new Oliver "9." Think of touch so light that the tread of a kitten will run the keys!

Caution!

The new-day advances that come alone on this machine are all controlled by Oliver. Even our own previous models—famous in their day—never had the Optional Duplex Shift.

It puts the whole control of 84 letters and characters in the little fingers of the right and left hand. And it lets you write them all with only 28 keys, the least to operate of any standard typewriter made.

Thus writers of all other machines can immediately run the Oliver Number "9" with more speed and greater ease.

Warning!

This brilliant new Oliver comes at the old-time price. It costs no more than lesser makes—now out-of-date when compared with this discovery.

For while the Oliver's splendid new features are costly—we have equalized the added expense to us by simplifying construction.

Resolve right now to see this great achievement before you spend a dollar for any typewriter. If you are using some other make you will want to see how much more this one does.

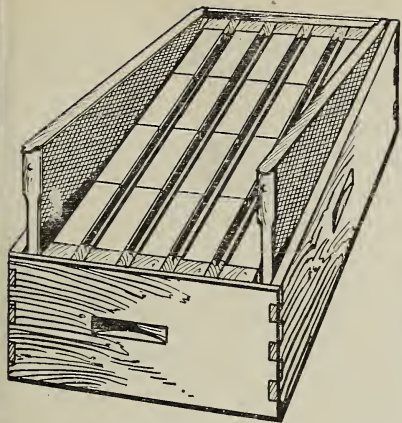
If you are using an Oliver, it naturally follows that you want the finest model.

17 CENTS A DAY! Remember this brand-new Oliver "9" is the greatest value ever given in a typewriter. It has all our previous special inventions—visible writing, automatic spacer, 6½-ounce touch—plus the Optional Duplex Shift, Selective Color Attachment, and all other new new-day features. Yet we have decided to sell it to every one everywhere on our famous payment plan—17 cents a day! Now every user can easily afford to have the world's crack visible writer, with the famous PRINTYPE, that writes like print, included FREE if desired.

TODAY---Write for Full Details and be among the first to know about this marvel of writing machines. See why typists, employers, and individuals everywhere are flocking to the Oliver. Just mail a postal at once. No obligation. It's a pleasure for us to tell you about it.

The Oliver Typewriter Co., Cleveland, Ohio

946 Prospect Avenue



The "F" Super and Its Advantages

The "F" Super is one of the new improvements which we have added to our line. It consists of a super holding 4 x 5 x 1 1/2 plain sections, and can be furnished in either eight or ten frame size. The eight-frame super holds 28 sections and the 10-frame 32 sections. This super is unlike many of the supers on the market, as it takes standard equipment and offers the beekeeper who at any time might care to change over to extracted honey an exceptionally good item.

It can be used for extracted honey by purchasing 5%-in. frames which will fit the inside of the super, or it can be used for comb honey. This saves the beekeeper from purchasing a whole new outfit should he ever care to change over to extracted honey, and at the same time gives him an A1 comb-honey outfit for the same price as a comb-honey super can be purchased.

Any row of sections can be taken out and replaced with a shallow frame without making any other changes or adjustments. Some of our customers who have been substituting the shallow 5%-inch extracting-frames on each side or in the middle are inclined to believe the bees enter the super much quicker.

Prices of the "F" super will be gladly furnished upon application.

Red Catalog, postpaid.

Dealers Everywhere.

"Simplified Beekeeping," postpaid.

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

GRADING RULES OF THE COLORADO HONEY-PRODUCERS' ASSOCIATION, DENVER, COL.,
FEBRUARY 6, 1915.

COMB HONEY

FANCY.—Sections to be well filled, combs firmly attached on all sides and evenly capped except the outside row next to the wood. Honey, comb, and cappings white, or slightly off color; combs not projecting beyond the wood; sections to be well cleaned. No section in this grade to weigh less than 12 1/2 oz. net or 13 1/2 gross. The top of each section in this grade must be stamped, "Net weight not less than 12 1/2 oz."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NUMBER ONE.—Sections to be well filled, combs firmly attached, not projecting beyond the wood, and entirely capped except the outside row next to the wood. Honey, comb, and cappings from white to light amber in color; sections to be well cleaned. No section in this grade to weigh less than 11 oz.

net or 12 oz. gross. The top of each section in this grade must be stamped, "Net weight not less than 11 oz." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NUMBER TWO.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 oz. net or 11 oz. gross; also of such sections as weigh 11 oz. net or 12 oz. gross, or more, and have not more than 50 uncapped cells, all together, which must be filled with honey; honey, comb, and cappings from white to amber in color; sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 oz." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

Comb honey that is not permitted in shipping grades

Honey packed in second-hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured, or patched-up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells, or a less number of empty cells.

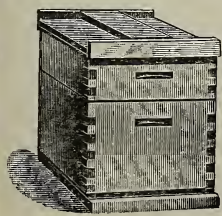
Sections weighing less than the minimum weight.

All such honey should be disposed of in the home market.

EXTRACTED HONEY

This must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained, and packed in new cans; sixty pounds shall be packed in each five-gallon can, and the top of each five-gallon can shall be stamped or labeled, "Net weight not less than 60 lbs."

Extracted honey is classed as white, light amber, and amber. The letters "W," "L A," "A" should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new substantial cases of proper size.



Early-order Discounts will
Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. . . . Write for our illustrated catalog and discounts today.

Leahy Mfg. Co., 95 Sixth St., Higginsville, Missouri

STRAINED HONEY

This must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained; and, if packed in five-gallon cans, each can shall contain sixty pounds. The top of each five-gallon can shall be stamped and labeled, "Net weight not less than 60 lbs." Bright clean cans that previously contained honey may be used for strained honey.

Honey not permitted in shipping grades.

Extracted honey packed in second-hand cans.
Unripe or fermenting honey weighing less than 12 lbs. per gallon.

Honey contaminated by excessive use of smoke.

Honey contaminated by honey-dew.

Honey not properly strained.

NATIONAL BEEKEEPERS' ASSOCIATION GRADING-RULES
Adopted at Cincinnati, Feb. 1913

Sections of comb honey are to be graded: First, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I. FINISH.

1. *Extra Fancy*.—Sections to be evenly filled, combs firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. *Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than six unsealed cells on either side, exclusive of the outside row.

3. *No. 1*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. *No. 2*.—Combs not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

II. COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III. WEIGHT.

1. *Heavy*.—No section designated as heavy to weigh less than fourteen ounces.

2. *Medium*.—No section designated as medium to weigh less than twelve ounces.

3. *Light*.—No section designated as light to weigh less than ten ounces.

In describing honey three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example: Fancy, white, heavy (F-W-H); No. 1, amber, medium (1-AM), etc. In this way any of the possible combinations of finish, color, and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour, or "weeping" honey; sections with comb projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than ten ounces.

KANSAS CITY.—The supply of comb honey is not large, and the demand is light. The supply of extracted is large and the demand very light. The market is really overstocked. We quote No. 1 white comb, 24 sections per case, \$3.00; No. 2 ditto, \$2.75; No. 1 amber ditto, \$2.75 to \$3.00; No. 2 ditto, \$2.50 to \$2.75; No. 1 white extracted, per lb., 7½ to 8; amber ditto, 6 to 7; No. 1 beeswax, 28; No. 2, 25.

C. C. CLEMONS PRODUCE CO.

Kansas City, Feb. 16.

BUFFALO.—Business in honey in this market is small. The retail trade is fully as good as usual at this time of the year. A great many of the retailers send to the country for their supply, thinking they can buy cheaper from the producer. The demand here is about equal to the supply in good white comb, lower grades pretty slow; extracted slow sale, unless offered at very low price. Choice to fancy white comb brings 15 to 16; No. 2 and 3, 10 to 12; extracted white, 7 to 9; dark, 6 to 7. Beeswax, 28 to 30.

Buffalo, Feb. 19.

W. C. TOWNSEND.

NEW YORK.—The market on comb honey is practically at a standstill at present, and of late the demand has been next to nothing, there being some little demand, however, for No. 1 and fancy white, but there is no demand for off grades whatever. Our stock is not heavy, but it is more than sufficient to fill the present demand. We have letters coming in right along from producers asking what we can get for comb honey, and we write them that, as the season is practically over, we would not feel justified in stocking up. As to extracted, the market is in pretty good shape, with a fair demand. There seems to be plenty of supply of all kinds, with the possible exception of California water-white sage; but we would not encourage shipments without first writing us. We quote nominal: California, 6½ to 8, according to quality; clover and basswood, 7½ to 8; off grades, amber and light amber, 6½ to 7; buckwheat, 6 to 6½; West Indian, 55 to 65 per gallon, according to quality. Beeswax is in fair demand from 29 to 30.

New York, Feb. 17. HILDRETH & SEGELKEN.

Honey reports continued on page 5.

Preparedness Pays Big Dividends

So fortify and equip yourself with our 1916 Catalogue. Now Ready. Write today.

**LEWIS' BEEWARE, DADANT'S FOUNDATION,
ROOT'S EXTRACTORS, SMOKERS, ETC.**

Anything and everything you might need in Bee Supplies—and at right prices. Ship us your old Combs and Cappings for rendering. Write for terms.

THE FRED W. MUTH CO.

204 Walnut St.

THE BUSY BEE MEN.

CINCINNATI, O.

QUEENS FOR EARLY SPRING DELIVERY

We conduct a Bee and Queen Rearing Business in Florida during the winter, and at Canton, Ohio, during the summer. We now have a carload of selected Italian Bees in Florida for the purpose of supplying you with Bees and Queens for EARLY SPRING DELIVERY. WE GUARANTEE PURE MATING AND SATISFACTION IN EVERY RESPECT, OR MONEY REFUNDED. We are breeding from Queens that gave a surplus of 300 pounds per colony in a 24-day honey-flow. Will it not pay you to have this strain of bees in your yard? Prices as follows:

ISLAND-BRED ITALIAN QUEENS.

Shipments begin March 1.

	1	6	12
Untested	\$1.50	\$ 7.50	\$12.00
Tested	2.00	10.50	18.00
Select Tested ...	3.00	15.00	24.00

Tested Breeding Queens,
\$5.00 and \$10.00 each.

Prices on Nucleus and Full Colonies without Queens. Shipping Now.

One-frame Nucleus....	\$2.00	Three-frame Nuclei	\$4.00	Eight-frame Colony....	\$ 8.50
Two-frame Nuclei	\$3.00	Five-frame Nuclei	5.00	Ten-frame Colony	10.00

Address all communications to

THE J. E. MARCHANT BEE AND HONEY COMPANY, CANTON, OHIO

PRICES ON BEES BY THE POUND F. O. B. SHIPPING POINT. Shipment begins May 10.

	1	6	12
1/2-lb.	\$1.50	\$ 7.50	\$12.00
1-lb.	2.00	10.50	18.00
2-lbs.	3.00	15.00	27.50
3-lbs.	4.00	21.00	36.00
5-lbs.	5.50	27.50	50.00

(These prices are without Queens)

"A Square Deal"

Markham Ont., Oct. 1, 1915.

Mr. H. D. Murry, Mathis, Texas.

DEAR MR. MURRY:—As I have used quite a number of your queens during the last three seasons, I thought you might be interested to know how they have turned out. They have given universal satisfaction, and in only three or four cases in this time have any queens shown to be defective. In each case such queens were promptly replaced. While the queens have given satisfaction, that is only one factor that pleases me in my dealings with you, as during all the time I have had business connections with you promptness in answering letters, and other features that go to make the ordinary routine of business a pleasure have always been in evidence. While I feel that I can confidently recommend your queens as being satisfactory in every way I certainly can also assure prospective customers that they can be sure of a "square deal" every time they do business with you.

J. L. BYER.

Three-band Italian Queens

My queens are bred from imported mothers.

They are the best for honey-gathering and gentleness.

I fill orders as promptly as possible.

GUARANTEE that all queens will reach you in good condition, to be purely mated, and will give perfect satisfaction.

PRICES --- April 1 to July 1

Untested . . .	one, \$0.75; six, \$4.25; doz., \$8.00
Select Untested90 5.00 9.00
Tested . . .	1.25 7.00 13.00
Select tested . . .	2.00 11.00 20.00

L. L. Forehand, Fort Deposit, Ala.

Starting twenty years ago with queens from H. L. Roby, of Worthington, W. Va., and later securing a fine breeder from J. P. Moore, Morgan, Ky., then by constantly, carefully selecting by breeders from the colonies giving the best yields of honey and showing the most desirable traits otherwise, I have built up a strain of bees unexcelled for beauty, gentleness, and honey-producing qualities. Please write me your needs for this season in the way of queens, nuclei, and bees by the pound, and I shall be pleased to give you prompt and satisfactory service. Three-banded Italians. No disease. Tested queens in March; untested queens after April 1. Prices before May 1: Tested queens, \$1.25 each; \$1.00 per dozen; untested queens, \$1.00 each; \$10.00 per dozen.

H. D. Murry, Mathis, Texas

If Your Bees Have Foul Brood

Get my queens. Three-band and Golden Italians.

One Untested Queen, \$1.00, six, \$5.00. One Tested Queen, \$1.50; six, \$8.00. One-frame Nuclei, \$2.00; 2-frame, \$3.00. Add price of queen wanted.
1/2 lb. bees, \$1.50; 1 lb., \$2.50.

W. J. LITTLEFIELD, LITTLE ROCK, ARK.
414 West 7th Street

Do You Need a Queen for that Queenless Colony?

We can furnish tested Italian queens by *return mail*, \$1.00 each. These queens are not cull nor inferior in any way because they are cheap. They were reared last September and October, and wintered in four-frame nuclei expressly for our early spring trade in tested queens. We expect to have untested queens ready to mail about April 10; \$1.00 for single queen; \$9.00 per dozen. We began rearing queens for sale in 1886. Our strain of three-band Italians is well known to leading beekeepers. We have never had a case of foul brood in our apiary, and we guarantee every queen sent out by us. We solicit your orders.

J. W. K. Shaw & Co., Loreauville, Louisiana



ITALIAN QUEENS THREE-BANDED

Ready April 1. Of an exceptionally vigorous and long-lived strain of bees. They are gentle, prolific, and the best of honey-gatherers. Untested, \$1.00; 3, \$2.75; 6, \$5.00; 12, \$9.00. Tested, \$1.25; 6, \$6.50; 12, \$12.50. Send for my free circular and price list, and see the natural conditions under which my queens are raised. Will book orders now.

John G. Miller, Corpus Christi, Texas
723 South Carrizo Street

Gleanings in Bee Culture

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A. I. ROOT

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H. H. ROOT

Managing Editor

J. T. CALVERT

Business Mgr.

Department Editors:—Dr. C. C. Miller, J. E. Crane, Louis H. Scholl, G. M. Doolittle, Wesley Foster, J. L. Byer, P. C. Chadwick, Grace Allen.

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Per year, postpaid, 8 francs.

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DUNEDIN, NEW ZEALAND.—Alliance Box Co., 24 Castle St. *Per year, postpaid, 6/7 p.*

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Honey reports continued from page 2.

INDIANAPOLIS.—The demand for honey the past week has been unusually good, more especially comb. We are selling No. 1 or choice white comb at \$3.75 to \$4.00 per case; No. 2 white comb at \$3.50. Extracted of best quality is bringing 9½ to 11. We are paying 28 cts. cash or 30 in trade for good average wax delivered here.

Indianapolis, Feb. 18. WALTER S. POWDER.

CHICAGO.—During the past few days there has been more movement in honey than for some weeks past, which, of course, is usual at this time of the year; prices, however, are weak. Best grades of white comb honey are selling at about 15 cts. per lb., with the amber and off colors at from 1 to 3 cts. per lb. less; extracted white, 7 to 8, according to the kind and quality. Amber grades range at from 6 to 7. Beeswax is steady at 30.

Chicago, Feb. 16. R. A. BURNETT & Co.

DENVER.—Local demand for comb honey is light, with ample supply. We are selling in a jobbing way as follows: Fancy white, per case of 24 sections, \$3.15; No. 1 per case, \$2.93; No. 2 per case, \$2.70; white extracted, 8½ to 8¾; light amber, 8 to 8¾; amber, 7 to 8. We pay 25 cts. per lb. in cash and 27 in trade for clean yellow beeswax delivered here.

THE COLORADO HONEY-PRODUCERS' ASSOCIATION.
Denver, Feb. 19. F. Rauchfuss, Mgr.

ST. LOUIS.—The demand for both comb and extracted honey in this market is still very light, and stocks quite large for this time of the year. We are still quoting light amber comb honey, in 24-section cases, at \$3.25 to \$3.50. Amber from \$2.50 to \$3.00; extracted honey in 60-lb. cans, from 5 to 8½; Southern amber extracted in barrels, 5 to 5½, according to quality. Beeswax is firm at 28½ for pure; impure and inferior, less.

St. Louis, Feb. 18. R. HARTMANN PRODUCE CO.

ALBANY AND SCHENECTADY.—Lower prices have stimulated the demand for honey, and it looks now as tho the market will be well cleaned up, and no stock to carry over. In fact, there is a scarcity already of buckwheat, both in comb and extracted; this will help out on clover. We quote fancy white at 13 to 15; medium grades, 10 to 12; buckwheat, 12 to 13; extracted, light, 7 to 8; amber, 6 to 7; buckwheat, 6½ to 7.

Albany and Schenectady, Feb. 18. CHAS. MACCULLOCH.

ZANESVILLE.—There is little change to report since last quotations. For the season the demand is about normal and price about stationary. Better grades of white comb go to the retail grocery trade at \$4.00 a case with some concession on quantity orders. Best white extracted, 9 to 11, according to quantity. Twenty-eight cents cash, 30 in trade, is paid producers for beeswax, selling prices being largely arbitrary, and varying with quantity.

Zanesville, Feb. 18. E. W. PEIRCE.

BANKING BY MAIL AT 4%

Complete Plans for 1916

Your plans for 1916 may embrace a great many desirable features, yet if they do not include a system of saving you will not achieve the fullest measure of success during 1916.

Open a savings account with this strong bank with any sum from \$1 upwards. Saving is the plan that has long ago been proved the only certain means of attaining independence.

Money may be safely sent by mail in the form of a check, draft, money order, or currency by registered letter.

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A. T. SPITZER, Pres.
E. R. ROOT, Vice-Pres.
E. B. SPITZER, Cashier

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Delivered to You Free

A sample 1916 model "Ranger" bicycle, on approval and 30 DAYS TRIAL, and free riding test.

Write at once for large illustrated catalog showing complete line of bicycles, tires and supplies, and the most marvelous offer ever made on a bicycle. You will be astonished at our low prices and remarkable terms.

Wanted—Boys, make money riding Bicycles, Tires, and Sundries from our big catalog. Do business direct with the leading bicycle house in America. Do not buy until you know what we can do for you. WRITE TO US.

MEAD CYCLE CO., DEPT. A113 CHICAGO

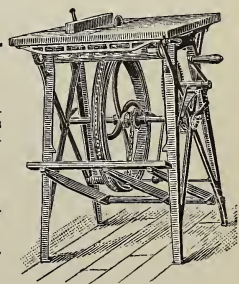
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This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

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W. F. & JOHN BARNES CO.
545 Ruby St.
ROCKFORD, ILLINOIS



NOW IS THE TIME

To order your supplies, and thus
have every thing in readiness for
the spring.

We carry a full line of Root's Goods at all times, and are always prepared to fill any and all orders on short notice.

Hives, supers, frames, sections, comb foundation, section-presses, foundation-fasteners, queen-excluders, queen and drone traps, swarm-catchers, feeders, honey and wax extractors, capping-melters, honey-knives, honey-tanks, honey-packages, shipping-cases, bee-escapes, bee-veils, bee-gloves, bee-brushes, smokers—in short, everything the beekeeper requires for the proper conduct of an apiary.

C. H. W. Weber & Company, Cincinnati, O.
2146 Central Avenue

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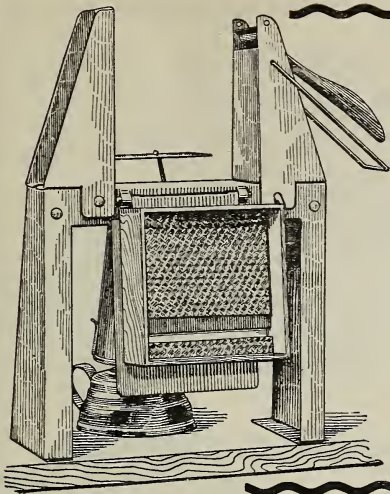
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R_____

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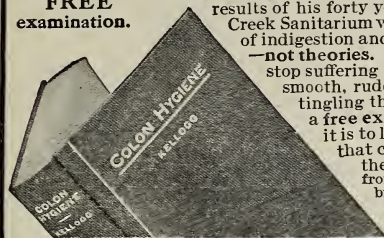
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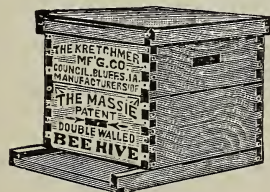
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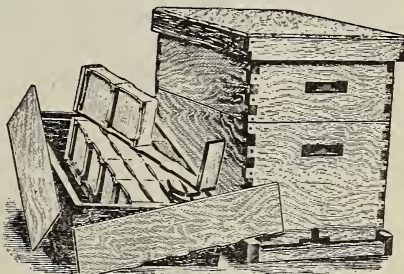
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One page is given over to the RAUCHFUSS FOUNDATION CUTTING-BOX, a practical little outfit for the beekeeper.

Two other articles, a SECTION-HOLDER NAILING-FORM and FRAME WEDGE-DRIVER are offered.

Two whole pages of INSTRUCTIONS TO BEEKEEPERS, by C. P. Dadant, will be found interesting to the old beekeepers as well as the new.

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EDITORIAL

Who can send in a good photograph of an exhibit of bulk comb honey, in glass, if possible for publication in our July 1st issue? A subscriber requests information about the exhibiting of bulk comb honey.

Our Cover Picture

THE illustration on our cover for this issue shows David Running's concrete honey-house, work-shop, and cellar. The entrance to the latter is in a side hill, as shown—a most convenient arrangement. Mr. Running's description of the building, with two other illustrations and plans, appears on another page.

This Honey-house Number

If the reader of these pages ever expects to go into beekeeping extensively enough to need a building aside from some woodshed or room in his private house, he will do well to lay this number aside and keep it for future reference. It contains nearly every feature useful in a honey-house, bee-house, or house-apiary; and at the same time it shows the arrangement of the hives in the yard with reference to the building. Wherever possible, it is advisable to put the apiary on a slight grade, and the building on the edge of a side hill. In this way the loads of honey, as Mr. Chadwick points out, will run down grade into the building. If the honey-extractor is on the side of the building that stands up on stilts, the honey can be run by gravity into a receiving-tank below. If this is elevated above the height of the wagon-box plus the height of a 60-lb. square can, one can draw his honey into the can and put it on the wagon without any lifting.

During the winter months beekeepers will do well to make their plans, if possible, to

get the building erected before the active bee season begins.

Of course, where ground is on a level, as it is in most cases, one will be compelled to use a honey-pump.

Prospects for the Next Season's Honey Crop from Clover and Basswood Good

MR. FRANK MCNAY, formerly of Mauston, Wis., but of late years of Pasadena, Cal., remarked to us last winter when we were visiting at his place that he thought he could explain why basswood and clover would yield some years and not others. Said he, "If the ground freezes wet there will be honey; but if it freezes dry there will be no honey." This winter it froze wet, and it has been staying wet in practically all the clover and basswood regions of the northern states. If Mr. McNay's rule holds true, 1916 will be a bumper year for the clovers and basswood, provided, of course, no drouth sets in in the early part of May and June. It is to be hoped that the coming summer will not be exactly the reverse of the last one.

The Advantages of House-apiaries

WE would call attention particularly to Mr. E. C. Barber's article in this issue describing his beehouse and workshop. The house-apiary side of it shows some very excellent features—features that could be adopted to advantage in a house-apiary containing many more colonies than are provided for in this.

The scheme of furnishing light and ventilation by means of swinging sash is as good as anything we have seen. When one works inside of a building the bees will sometimes fly off the combs and drop down on the floor. By tilting the sash the bees usually fly to the window and escape. The

plan of painting the entrances different colors, while not new, is good.

At the close of the article Mr. Barber gives some reasons for preferring the indoor plan of keeping bees. Every one of them is good. Except for the expense of a building of this kind we do not know but we would rather keep bees this way than by the usual plan outdoors.

The Pendulum Always Swings Back

SOME years ago an analysis of the honey market revealed the fact that comb-honey prices were firmer than those of extracted. So many large producers had changed over from comb to extracted, that comb honey at certain seasons of the year was a scarce article. Noting this, GLEANINGS urged the production of more comb honey, believing that the general market would be better balanced thereby.

It now appears that the pendulum may be swinging back again toward the other extreme. At least, there seems to be quite a large amount of comb honey in many of the principal markets which is moving but slowly and at a rather low price proportionately. Comb honey, while not a perishable product, is more likely to deteriorate if kept too long. We believe the 1916 market would be better balanced if a somewhat greater proportion of extracted honey were produced.

A Memorial to Joseph E. Wing, the Apostle of Alfalfa and Sweet Clover

THE following, from the *Rural New-Yorker*, will explain:

Here is something for those who knew and loved Joseph E. Wing, of Ohio. Since his death a fund has been raised by popular subscription for a memorial to this great agricultural teacher. The money is to be used to provide lectures on agriculture at one or more of the agricultural colleges each year. It is to be known as the Joseph E. Wing Memorial Fund Lecture. Men of national reputation will attend each year and discuss the things which Joe Wing stood for. It is better to have many persons each contribute small sums to such a fund, and we have no doubt some of our readers will want to help. If so, they can write direct to H. C. Price, Newark, Ohio—the chairman.

GLEANINGS most heartily joins in this, and hopes its subscribers, especially those in the West, who have profited by Mr. Wing's work in the extension of alfalfa,

thereby creating new bee territory, will contribute to this fund.

As stated by the *Rural*, it is better to have many persons each contribute a small sum than to have a large amount from a few sources. If there ever was a man in this country who helped give untold wealth to the western prairies and desert lands, Mr. Wing was that man. He did much thru his advocacy of alfalfa and sweet clover to develop the honey industry, too, in an indirect way, in that thousands of carloads of alfalfa and sweet-clover honey are now produced in localities that furnished no honey before. He was also an advocate of sweet clover; and a month or so before he died he suggested that we get after a certain experiment station that was advising the farmers to kill sweet clover everywhere, saying that it was a noxious weed; and we did go after them by telling them they must have been asleep along with Rip Van Winkle, and that it was now time for them to wake up.

Under Such Circumstances Don't Kick the Barrel

FROM the *Atlanta Constitution* we learn that bees are likely to figure in a trial before the supreme court of Georgia.

It seems that "an Atlanta negro, Roscoe Richards, was standing last summer over a barrel full of watermelon rinds. The barrel was also full of bees feeding on the rinds, a fact which Roscoe didn't know. As he bent his head down into the barrel to see if there weren't something worth picking up, another negro kicked the barrel. The bees arose angrily and alighted all over Roscoe's ebony head and face.

"Roscoe turned over in the air; but when he alighted he came down like a cat on his feet, and his razor was already out and open. He is said to have attacked the other negro, and literally cut him to pieces. Richards employed lawyers; and when the case came to trial recently, he pleaded not guilty, and interposed the simple plea of 'self-defense.'"

The Work that has been done by the Bureau of Entomology in the Line of Apicultural Inspection Work

It has been our pleasure to note an editorial in the *Entomological News*, referring to work done by the Bureau of Entomology, Washington, D. C., under Dr. E. F. Phillips, and particularly to the work done by one of his assistants, Dr. James A.

Nelson. We are pleased to present a portion of what the *Entomological News* has to say.

The Embryology of the Honey Bee. By James Allen Nelson, Ph.D., Expert Bee Culture Investigations, Bureau of Entomology, U. S. Department of Agriculture. Princeton University Press, Princeton, October, 1915, 12mo. Pp. vi, 282; 95 text figs., 6 plates; \$2.00 net. The broad and comprehensive way in which the bee-culture investigations of the Bureau of Entomology have been considered and treated since Dr. Everett Franklin Phillips was placed in charge of them in 1907 is strikingly illustrated by the publications which have emanated from the investigators concerned. Snodgrass has given us the results of a careful and original re-examination of the anatomy of the honeybee; Casteel has corrected our notions of the manipulation of the wax scales and the behavior of the bee in pollen collecting; McIndoo has informed us on the olfactory sense and on the scent-producing organ; Phillips, C. A. Browne, B. N. Gates, G. F. White, and G. S. Demuth, singly or in conjunction, have dealt with various practical phases of apiculture and especially with bee diseases, while Phillips has summed up these and other researches and experiences in a recent volume in The Rural Science Series. Now comes the still more esoteric volume on the embryology of the honeybee. The keynote to all this work is in the first sentence of the preface contributed by Phillips to Nelson's book before us: "The good beekeeper is he who is interested not only in those things which have to do directly with the production of honey, but to whom everything pertaining to honeybees has a deep interest." The conception that "everything pertaining to honeybees" should include an extensive and intimate knowledge of structure, physiology, behavior, and embryology exhibits a breadth of view which it is a pleasure to emphasize in a journal devoted rather to pure than to applied entomology.

Butschli (1870), Kowalevski (1871), Grassi (1884), Blochmann (1889), Petrunkevitch (1901, 1903), Dieckel (1903), and Nachtsheim (1913) have described various phases of the development of the egg of the honeybee; but Nelson's work is more extensive and thorough-going than any of these, altho it is devoted to the embryonic history of the workers and queens only, not of the drones.

The Massachusetts Convention and the Spraying Situation

WE wish to call especial attention to the program of the annual beekeepers' convention at the Massachusetts Agricultural College, March 14, 15, 16. A complete program of this convention is given under Convention Notices on another page of this

issue. One of the chief subjects for discussion, and one which should interest every beekeeper and fruit-grower, is the subject which will be discussed in the Beekeepers' Round Table on "Spraying Practices versus Beekeeping." The Round Table discussion on this subject is an effort to bring out various aspects of a problem confronting the beekeepers of the country as a whole. First, Dr. Burton N. Gates will present "The Beekeepers' Standpoint." Second, such evidence as has been obtained by the chemist, which bears upon the possibility of bees being killed by arsenical sprays, will be presented by Dr. E. B. Holland, chemist. Third, the horticulturist who is obliged to spray in order to control insect pests will present his side of the question, stating, doubtless, how his practices may be adapted so as not to conflict with the beekeepers' interests. He will also, possibly, explain the relationship of his spraying methods to the insects which are being combated. W. W. Chenoweth will present this phase of the situation. Fourth, the forest entomologist will explain his policy in similarly combating insects, and suggest any method which may be carried out in an effort to obviate a conflict with beekeeping interests. A. F. Burgess will consider this phase. Fifth, Fred Southard will present the side of the municipal forester, and will endeavor to determine how the different varieties of shade-trees in towns and cities may be sprayed for insect control without working harm to the beekeeping interests. Sixth, a final discussion will take place in which it is hoped that prominent beekeeping authorities will take a leading part.

It is hoped that the material which is prepared for this occasion will be reported and presented in form for publication, in order to be available for beekeepers and spray men the country over.

The Opening-up of More Bee Country by the Purchase of Territory by the United States in Northwestern Mexico

OUR readers have already been informed of the wonderful bee country known as the Imperial Valley in southern California. This country, formerly a desert, has, by irrigation, been opened up so that now it is one of the most productive of any region in the United States. It is said to have land equal to that in the Nile Valley in Egypt. But it appears that there are thousands of acres beyond the boundary line that are just as good, and which Uncle Sam is desirous of purchasing, and which Mex-

ico, in her present impoverished condition, is equally anxious to sell.

For some reason which no one is able to explain satisfactorily, except thru the agency of bad diplomacy and crooked politics, the southern boundary line of the United States takes a sharp dip upward, thereby missing some of the best soil on the continent. Had the original boundary been carried down along the line of parallel 32, the area of the Imperial Valley would have been much larger than it is. It would make available thousands and thousands of acres of land that would open up good bee locations, and which would be as good as any territory now in the United States.

Two bills are now before Congress providing for the purchase of Lower California, that large peninsula that extends southward for 800 or 900 miles, and also for the purchase of that strip which bars us from the Gulf of California.

In view of the fact that this opens up some beautiful bee country our subscribers, especially those in the West, are urged to write to their Senators and Representatives in Congress, urging them to support and vote for these two bills. According to a writer in the *Independent*, Mr. Edwin E. Slosson, "It is an exceptionally favorable time to secure these much-needed accessions to our territory now when the presidency of Mexico is held by a man who owes his position to American support, and when the Powers whose ambition such action would thwart are occupied elsewhere. . . . The money we would pay for it would be very welcome to Mexico, now impoverished by five years of anarchy."

There certainly can be no objection to the acquisition of additional territory to the United States by honorable purchase, whatever we may think of the present policy of the warring nations in Europe in the line of land-grabbing simply because they are big and powerful.

This crooked boundary line which, early in the '50's, took a sharp dip northward, goes back to some crooked history on the part of some of Uncle Sam's diplomats in the early days. During those times Daniel Webster did some things that will not go down very greatly to his credit. According to Edwin E. Slosson, already referred to, the children who are now studying United States history will come to regard Daniel Webster as the New Yorkers now regard Benedict Arnold.

It is going to cost millions and millions to undo the work of Webster and some of his colleagues.

There are additional reasons why we

should have the Gulf of California and Lower California, because it is apparent that Japan and Germany have been looking with covetous eyes on this part of the world. Mexico is too weak to protest against either of them establishing coaling-stations there; and if Uncle Sam acquires the territory it will end all possible chance of international complications over the Monroe doctrine, because it is to be presumed that neither of the nations mentioned will attempt to put foot on our territory when once acquired.

Imports of Honey; Why the Price of Domestic Honeys of Lower Grade is Down and Markets Slow

THE general belief that the low prices received for southern extracted honeys of low grade have been caused by increased imports of low-grade extracted from Latin America is confirmed in Bulletin No. 325 published by the Department of Agriculture.

During the fiscal year ending June 30, 1915, the United States imported three times as much honey from foreign countries as had been imported in any previous year. The total foreign imports for the five fiscal years ending June 30, 1910 to 1914, were 104, 113, 115, 116, and 75 thousands of gallons, as compared with the 303,965 gallons imported in the fiscal year ending in 1915. The value of the imports for last year totaled \$124,843.

This change has been due to the war in Europe which closed to commerce certain of the countries which had been heavy buyers of Latin American honey. The beekeepers left without a market shipped the product to the United States.

The bulletin sums up the statistics in the following conclusions:

"Compared with the total production of the United States as reported by the census, the heavy imports for the present fiscal year, which from all sources probably total over 600,000 gallons, are therefore about 12 per cent, though probably less, if compared with the actual production. Compared with the portion of the home crop actually marketed, however, the percentage would be much larger, and its absolute bulk compared to the quantity of low-grade extracted honey produced here for market is so great that it has seriously interfered with the marketing of the latter, and, combined with the financial depression in the South, where the lower grades are largely produced and consumed, has forced the prices of such

grades to extremely low figures. The heavy inward movement of foreign honey shows no present signs of abatement and must be accepted as a probable factor for some time to come."

Before hasty proposals to raise the tariff on foreign honey are broached, it should be remembered that Porto Rico and Hawaii, insular possessions of the United States, together exported to this country during the fiscal year of 1915 more than the total imports from foreign countries combined. Consequently any tariff legislation directed against foreign honey could not affect the larger part of the imports. The imports from the island possessions have arisen so high during the last two years that, even if practically all foreign honey were shut out, it would be impossible to reduce the total imports to what they were in 1912 or 1913.

The new bulletin will be found of interest to beekeepers generally, and may be obtained from the Superintendent of Documents, Washington, D. C., at five cents a copy.

The Lament of Job, Again; What is the Matter with the Alexander Treatment for the Cure of European Foul Brood?

THE following letter, received from Mr. Pressler, of Pennsylvania, will explain:

Mr. Editor:—In your editorial, page 89, entitled "Lament of Job," you wish to know if there is any one who has been able to stamp out absolutely European foul brood. Then you say, "How about it, Dr. Miller?" I believe that precludes all but the old Nestor of bee lore. What is the matter with hundreds of men like Dr. Alexander, scientific in more than one of the many branches? If Dr. Holtermann wants to know if "any one" ever succeeded, let him come right here to Williamsport. I can take him 14 miles east of here, where the first beekeepers' association was organized in this state for the purpose of checking the spread of this disease. This culminated subsequently in the formation of the state organization here in our court-house, with the writer as presiding officer. At that time every yard was infected in this county, including thousands of colonies, and now I am satisfied not a cell abounds. All were cured absolutely, and without the loss of a single dollar other than labor, and at first a few dollars for experimenting on formaldehyde gas.

Ellis E. Pressler.

Williamsport, Pa., Feb. 8.

No, Dr. Miller is not the only one who is invited to tell how we can cure European foul brood absolutely, without leaving a trace of the disease behind. If we are cor-

rectly informed, some who have tried the Alexander plan have found that the disease came back again. Others report that it worked successfully. This treatment as Mr. Alexander gave it out a few years ago, and that proved to be such a great success with him and many of his followers, was as follows:

Go to every diseased colony you have, and build it up either by giving frames of maturing brood or uniting two or more until you have them fairly strong. After this go over every one and remove the queen; then in nine days go over them again, and be sure to destroy every maturing queen-cell, or virgin if any have hatched. Then go to your breeding queen and take enough of her newly hatched larvæ to rear enough queen-cells from which to supply each one of your diseased queenless colonies with a ripe queen-cell or virgin just hatched. These are to be introduced to your diseased colonies on the twentieth day after you have removed their old queen, and not one hour sooner, for on this very point your whole success depends; for your young queen must not commence to lay until three or four days after the last of the old brood is hatched, or 27 days from the time you remove the old queen. If you are very careful about this matter of time between the last of the old brood hatching and the young queen commencing to lay, you will find the bees will clean out their breeding-combs for this young queen, so that she will fill them with as fine healthy brood as a hive ever contained. This I have seen in several hundred hives, and have never seen a cell of the disease in a hive after being treated as above described.

It is not necessary to remove any of the combs or honey from the diseased colony; neither is it necessary to disinfect any thing about the hive. Simply remove the old queen, and be sure the young queen does not commence to lay until three or four days after the old brood is all hatched. This treatment with young Italian queens is a perfect cure for black brood.

In addition to the foregoing letter we have received a large number of other communications—so many, in fact, that we are not able to give space to many of them; and what we do publish will have to be condensed. We may say, in the mean time, that one of our correspondents in Canada believes that European foul brood is one of the worst scourges that ever visited this country. He says he has had extended experience with it, and thinks the only way to get rid of it is to burn every colony—hives, bees, combs, and all. If it gets a start in the apiary he would burn the whole yard. He would favor legislation to compel every beekeeper to exterminate colonies affected with this scourge.

Another correspondent believes that, in addition to requeening, the McEvoy treatment with two shakings should be used, and the hives disinfected.

Quite a large number, including Mr. Presler, believe that the Alexander treatment is quite effective.

We are surprised at the amount of testimony that seems to favor Dr. Miller's views as expressed in one of his *Stray Straws* in this issue—namely, that it is not necessary to destroy the combs. In the midst of the mass of this conflicting testimony the reader will have to exercise his judgment in the matter so far as the law and the inspectors will permit.

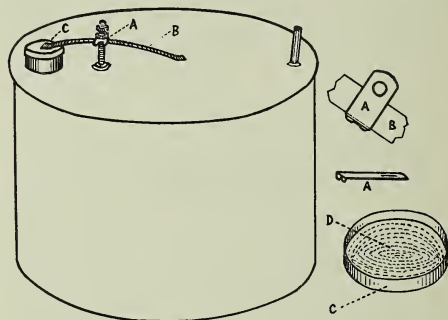
In the mean time the reader is referred to one of Dr. Miller's paragraphs on this subject in this issue that is characteristic of the man. Verily, the sage of Marengo will never grow old. If there was ever a man who is able to carry a smile into printed matter it is he.

A Safety-first Safety-valve

Two beekeepers have had trouble with their steam uncapping-knives, in that the opening in the end of the knife became clogged and the steam pressure in the boiler increased enough to burst the boiler. It is next to impossible to have any such trouble with the ordinary amount of fire used under one of these little boilers unless the opening at the point of the knife for the escape of the steam becomes clogged up. In ordinary use this opening will be kept clear; but if the knife is used to push away the cappings or slumgum in the capping-melter, especially when the knife itself is cold before steam is up, some of the melted wax, or fibrous material from the cocoons, may clog the opening in the point of the knife so that the steam cannot circulate. Consequently, unless the rubber hose blows off the tube, either at the knife or at the boiler, something will surely "happen." Of course, a wooden paddle is the proper implement to use to poke away the accumulation of cappings, altho when the knife is hot and steam is issuing from the point, there is very little danger that it will get clogged up; but to be on the safe side we believe that a safety valve should be applied. If a common tea-kettle is used for a boiler—and, by the way, this makes one of the very best boilers imaginable—there is not much danger of a serious explosion, for the cap will be forced out before the steam pressure reaches a really dangerous point. As has been explained before in these columns, if a tea-

kettle is used the cap should be fitted in tightly enough to hold the steam, by means of several layers of cheese-cloth.

A large cork, at least an inch in diameter, if not pushed in too tightly, works after a fashion; but for a ten-pound pail, a gallon honey-can, or copper can made for the purpose, we recommend the following arrangement for a safety valve.



Steam honey-knife boiler, showing construction of safety valve. A, clip which holds super-spring to adjusting-screw. B, super spring. C, tin cap covering 1-inch brass tube. D, rubber packing within tin cap.

The tube for the hose should be soldered at one side of the can or boiler, as indicated in the accompanying sketch. About an inch and a half from the opening where the boiler is filled, solder an ordinary brass binding-screw from the carbon of an old dry battery. Hunt up a round tin "salve-box," the cover of which is just large enough to fit over the opening in the boiler, and cut a round piece of rubber packing that will just fit inside. If none of this is at hand, heavy cardboard will answer nearly as well. See C and D in the drawing.

Out of heavy tin make a little clip, A, and punch a hole in one end so it will just slip over the screw before mentioned. When the super spring is in position, as shown, put on the tin clip, A, and turn down the brass nut until there is some tension on the spring—just enough to keep it in position. When you use the knife, if steam leaks out under the cap turn the screw down a little more.

With this arrangement, in case anything should go wrong with the knife, the steam, when the pressure increases somewhat, will leak out under the cap. Furthermore, this sort of arrangement is far easier to open up for the purpose of adding more water. There is no hot slippery cap to unscrew, for the super spring can be pushed back away from the tin cap. It is not even necessary to change the adjustment of the screw.

Dr. C. C. Miller

STRAY STRAWS

Marengo, Ill.



WILLIAM BEUCUS, you say, p. 117, "The black is the older race." Where do you get that? All authorities I've ever read say the other way.

"We still incline to the opinion that Mr. Ellis actually heard 'quahking,' page 124. Then that's the first quahking outside of a cell, and the first with tones of unequal length.

TIMBERLINE RIGGS, something seems wrong with your foundation, p. 102. You say, "In order for the disease to get a start, our bees must in some manner become weakened in vitality." "In this locality" the disease gets a start in colonies with strong vitality. And I'm a bit skeptical about its being crowded out of a weak colony—or a strong one either.

ARTHUR C. MILLER, after reading your article, p. 107, I don't wonder I didn't succeed with the smoke-distress method. I followed the instruction to give so many puffs, and I know they couldn't have filled with smoke the deep space below and all the supers above. You say, "When colonies are at work in supers, for gracious sake let them alone." Now you quit that. About the only time I wait to introduce a queen is when a colony is queenless, and that's mostly when supers are on. And then you don't want me to butt in. Huh!

FIVE pounds of sugar and two pounds of water make a syrup of the consistency of honey, and so I counted that 5 pounds of sugar might take the place of 7 pounds of honey. But there may well be a loss in the feeding, and it may also be that honey is the better food, so a pound of sugar may be none too much to replace a pound of honey. But, say! don't print this Straw in the copy you send J. L. Byer. I don't want that Kanuck to be chuckling over my back-down.

M. JOHNSTONE's plan for proving a plurality of laying workers in a colony, p. 78, is bright. Years ago it was proven in Europe in a different way. From a colony of laying workers many of the bees were taken and dissected, and a large proportion of them were found to contain eggs. I wish Mr. Johnstone had explained what he meant by saying "you will never forget the appearance of those discovered in the act." I suspect, however, that I know, for the only one I ever caught in the act had a striking appearance with its wings crowd-

ed up about its head in a very uncomfortable manner.

NO TROUBLE to make labels stay on tin if you have the right paste, p. 93, but not a word as to what the right kind is. Now, isn't that exasperatingly aggravating? If you know, why don't you tell? [As for the right kind of paste, it is not proper to advertise in the reading-columns. The fact is, however, you can buy a paste at almost any drugstore or stationery-house that sells paste that will fix labels to tin. There is a special paste for the purpose, however, and the same is advertised in another column.—Ed.]

AN Ohioan with nine colonies and a few neighboring colonies asks how he can rear queens from his one Italian colony and be reasonably sure of pure mating. A bit difficult. It's just as bad to have neighboring bees two blocks away as to have them in your own yard. You can encourage drones in your Italian colony and suppress drones in the others and then take your chances. Possibly you can have drones suppressed in neighboring colonies. But it isn't best to have drones and queens from the same colony.

THE new spelling in GLEANINGS is in the line of economy, and I rather like the looks of it, except "thru," which gives me a jolt every time. But if I'd always been used to "thru," spelling it "through" would give me a still worse jolt. I remember when honor, labor, etc., in place of honour, labour, etc., and arctic in place of arctick seemed just as strange as the present changes. Our spelling is by no means a fixt thing, and I wouldn't be stopt from making other improvements that should be accomplisht.

R. F. HOLTERMANN, I don't know whether I'm Eliphaz, Bildad, or Zophar; but while you're sitting among the ashes busy with your potsherd I may as well join the others, if only to "darken counsel by words without wisdom." You fear European foul brood cannot be stamped out. Well, you never entirely stamped out the weeds in your garden; yet I venture to say you've done good gardening. And you can raise good crops of honey while fighting European foul brood. When I first met it I looked forward to it with horror. As I look back upon it there's nothing very bad except the foolish loss of a lot of good combs that you can avoid. Cheer up, brother; things are not so worse as they might be.

Grace Allen

THE DIXIE BEE

Nashville, Tenn.



I am glad to note Mr. Crane's success with kerosene to keep off robbers. We have used carbolic acid, but should prefer kerosene.

That cabinet for Hoffman frames, page 122, Feb. 1, is a delight to look at, and probably more than that to possess. When we were feeding last fall, we realized that we needed some convenient contrivance for holding the frames that were removed from the supers for feeding. This looks admirably suited to the purpose, at least for a small apiary. In large yards, if much feeding were done in supers the surplus frames of comb must require careful handling. There are other times, too, when the bees are not occupying all the frames, and combs are awkwardly fragile things to stack up carelessly. Mr. Doolittle's overhead plan would take care of a generous surplus.

Don't we have good-looking covers? I cannot resist saying how I appreciate them and enjoy them. The Florida view on the cover of January 1 is exceedingly interesting, with the white hives under the drapery of picturesque Spanish moss, and then the little lake beyond. If ever I get to Florida again I shall certainly go looking up some apiaries, just as, if ever I get across the water, I shall go hunting out some of those rare and wondrous honeys described so fascinatingly on page 995, Dec. 1, and shall never be quite content till I have tasted the honey of Narbonne and that of Bourbon.

I feel like raising my voice in profound gratitude when I read any protest against division-boards. They are the one thing I despise, and the effort to pull them out is dangerous to my disposition. "I don't see a bit of sense in them—not a bit," I have declared over and over again to Mr. Allen, yet I might never have dared speak right out in meeting, as I supposed everybody else must be devoted

to them and utterly dependent upon them. But now I am pleased to add my word. Somebody had persuaded us, when I once threatened never to use one again, that they were necessary to the building of straight combs, so for a while we slavishly used them when there was a lot of foundation to be drawn; but when the hive or super once got filled with combs, out with a swish came my pet aversion. They are all right and convenient when you're making a nucleus or contracting a colony, but in a full hive—no, thank you.

Aren't all those articles about this new bee disease creepy? Whether we like the thought or not, war does not seem to be confined to the human race alone. Nature stages a perpetual war. Germs, insects,

plants, and animals are at war against one another. See what the bees alone have to fight. Even with the help of man's intelligence it is a hard battle against moths and spiders, ants, and birds, even robber bees, and, worst of all, against the diseases, germ or otherwise, that sometimes wipe them out by the thousands and hundred thousands.

MARCH

This mad young March! with the sting
of his laughter
Flung back like a dare as he roars
thru the days,
While troops of wild winds, reeling
recklessly after,
Dance round with delight at his riotous ways!

Who cares what rough unrest he brings?
He's doing things! He's doing things!

He lashes the trees till their sap is
atingle,
He teases the grasses and bullies the
birds,
He rowdies around with the shutter and
shingle,
And shouts without rhythm unmusical words!

Who cares what savage song he sings?
He's waking things! He's waking things!

The hives by the fence as with gossip
are humming—

"We know him, the rogue!" Aye,
they know him, those bees!
And swift thru his winds they are going
and coming

To plunge in the pollen of feathery
trees.

They chide no mood whose courage
flings

The bonds from waking hearts of things.

BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado



During January bees did not get much chance to fly, and the temperature ranged around zero for a longer time than is common here in Colorado. Bees, however, seem to be wintering well, as none but weak colonies have died so far.

The quality of winter stores seems to be good on the whole, despite the late nectar secured from the sweet-clover bloom. There is abundant snow in the hills, and the ground is in good condition. Alfalfa and sweet clover are up to normal if not above. Comb honey will be all gone before the new crop comes on, and there will be very little extracted left when new honey is extracted.

BEEHIVES AS HONEY-TRADE BUILDERS.

Colorado beekeepers are certainly not far behind others in the pushing of honey sales. The extracted-honey crop of Colorado was very poor, and, to hold their customers, I know of half a dozen beekeepers who have purchased in the aggregate twelve cars of California, Nevada, and Arizona honey to supply the trade they have built up. Probably more than fifteen cars of extracted honey produced west of Colorado will be distributed by Colorado beekeepers and Colorado associations. The price paid ranges from five to six and a half cents delivered in Colorado, and is sold at seven and a half to nine cents in a wholesale way.

EXPERIMENT-STATION BULLETINS.

The Colorado Experiment Station has just published Bulletin No. 211, "Colorado Plants Injurious to Livestock," by George H. Glower and W. W. Robbins. This is a most valuable paper to the livestock industry, and is well worth reading by beekeepers who wish to learn the relation of plants and flowers injurious to animals, that are of economic value to the honey industry.

Probably ninety-nine per cent of the losses to livestock come from larkspur poisoning; but the white larkspur growing on the plains east of the mountains has never caused any losses to livestock, so far as known. The larkspur growing in the foothills causes most of the trouble. Both furnish nectar for bees.

The wild cherry, of so much value to the beekeeper who lives near the foothills, is very dangerous to cattle if they eat the wilted leaves.

The lupines, milkweed, and the famous locoweed, are some of the other honey-plants that are the bane of the cattleman. The beekeeper who knows the various poi-

sonous plants will be better informed, and of more practical value to his neighbor, if he has a thoro knowledge of the poisonous plants of his district. He should know that larkspur comes on in June, lupines and loco at about the same time, and that larkspur poisons generally in June and July, while lupines do most of their damage late in the season, when cattle and sheep eat the pods.

THE BEEKEEPER'S SHOP.

One of my first recollections as a boy is the establishment my uncle Oliver Foster had for carrying on his beekeeping operations. He had four separate buildings surrounding his home apiary. On the east side was the warehouse for bee-supplies, which he handled in car lots. Under this building was the bee-cellar. Next to this building, on the southeast of the apiary, was the wood-working shop where he manufactured some of his own inventions such as the Foster super. There he had his saw-ables, engine, and lumber storage. On the west side of the apiary was the wax-house and vinegar-shed combined. This was handily near the pump, as every beekeeper readily will realize the advantage of having water close by when working wax. On the north side of the apiary was the extracting-house, comb storage, and everything was handled methodically; and there was a place for everything under cover. I do not recall ever seeing any empty hives piled outside. A house was built at each outyard so that all equipment could be kept dry.

The extracting-house necessarily had the most thought put upon its arrangement, as here was where the rush work of the season was done. The building was mouse-proof. The uncapping-can was placed at one end of a table upon which the honey was piled as brought in. Filling of the cans from the strainer-covered vats was done at one side of the extractor, and slightly below it, as honey-pumps were not used. All the work in the honey-house could move forward in a regular procession, no one getting in the way of others. As a boy I often got in the way in my desire to eat the honey-wet cappings, and I don't know of any chewing more delicious—do you? As fast as the cappings were drained comparatively free of honey they were taken to the wax and vinegar house, where they were washed, the honey water going to make vinegar, and the wax into the rendering-vat. This house also was the foundation factory where thousands of sheets of foundation were made.

BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.



One of the most unfair resolutions ever offered and passed by any organization was passed by the State Association. An exhibit was ordered, after which a resolution was offered disclaiming any responsibility by the association for the expense entailed. In other words, the association gave full sanction for an exhibit to be placed, for which it was to have the credit and somebody else pay the expense.

While visiting a friend recently, my attention was called to a colony of bees of exceptionally high honey-gathering qualities. My friend said he could tell that queen's daughters from any others in the yard of over two hundred colonies. I asked him what particular characteristics they possessed that they were so easily recognized. He answered that it was principally by the way their bees stung. They were Syrians.

In the *American Bee Journal* for December, page 412, Mr. Byer takes issue with Dr. Phillips on the matter of over-production. To my way of thinking, Mr. Byer has the best of the argument. The fact that it is necessary to resort to all kinds of ways to dispose of a season's output is conclusive evidence of over-production. Under-consumption, to be sure, may be explained as the reason for over-production; but until consumption is increased to a point where it absorbs the production, over-production will remain a fact.

In starting an experiment station for bees on an island in San Francisco Bay, the State University has taken the lead in disease control by scientific search. Why not give the entire foul-brood work over to men who are educated, and equipped to handle the situation? When our last foul-brood bill was up for sanction by the State Association I was told that the inspectorship must be in the hands of the beekeepers. What we need as an inspector at the head of this department is an educated man, one who can give a scientific analysis of any disease which may be found.

From the *Wide World Magazine* I have clipped an article that tells something of

migratory beekeeping in the Holy Land. After reciting the unique position of Palestine geographically in that the flora of three nations meet there, it tells how two brothers followed the flora, camping first in the low altitude, after which they transported their hives on camel back to a higher elevation, thus following the consecutive blooming period of different flowers. By using modern extracting machinery they were able to secure six tons of honey from one hundred colonies in a year. But the most striking assertion in the entire article was that this yield exceeded the yields on the great honey-farms of America and Australia threefold. The assertion that this yield is three times as great as on the big honey farms of America and Australia places some doubt as to the knowledge of the writer on the entire article.

Dr. A. F. Bonney, in the *American Bee Journal* for October, page 243, says: "I made several ventures into the domain of advertising to sell honey by mail, and find one serious handicap—the breaking of containers by careless mail-clerks and others who handle the sacks. These men, or many of them, seem to have an inherent hatred for parcel-post packages that are at all heavy, and a fragile tag is little or no protection." Dr. Bonney may know the honey business; but the assertions he is making in regard to postal employees is not placing them in the proper light, and leaves me to conclude that Dr. Bonney knows very little about true conditions in the postal service. Ten years of my life have been spent in the railway and city delivery service of Uncle Sam, and I wish to say that in nine cases out of ten it is with the packing rather than the men who handle the packages. The fragile tags are respected by postal employees, but they will not cover the faults of the one doing the packing. When a fragile parcel goes into a sack a fragile tag is attached to the sack outside. These sacks are handled as carefully as is possible with the volume of other parcels that are daily going thru the mails. If honey is packed properly it will be delivered in good condition; but do not expect to send comb honey thru the mails without proper shock-absorbers, corrugated paperboard, or something of that nature. Comb honey requires more careful packing than eggs.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.



Mention is made in the January 1st issue that it has been rather cold in Florida. My father is "wintering" on the east coast, about 100 miles south of Jacksonville, and he writes me that during all January there were only three days when he wore a coat, and there had been no frost whatever. Incidentally he says in one letter, "This place looks like a paradise to me"—some boost for Florida, eh?

The cold weather predicted in my Notes for January 1 has failed to arrive. At this date, Feb. 5, we have had little severe weather and almost no snow. We have had abundance of rain and much mild weather all thru January, but not nearly as warm as friends in Ohio have written me about, when the thermometer went up to over 60 degrees. The highest noted here was 47 on two different days, and unfortunately both of those days were very cloudy; so after having a very mild January our bees did not have a thoro flight. No doubt in some sections of Ontario if the sun shone on those two very mild days the bees had a fine flight. Even at the north yard, where snowfall is usually heavy, there has been but little there this season.

On page 75, Jan. 15, request is made from purchasers of queens that they report percentage of pure matings in untested queens bought. We have bought a lot of queens, and only the untested brand; and while I have kept no memorandum as to actual results as to pure matings I must in all sincerity say that in the great majority of my dealings we have been thoroly satisfied. More than that, I firmly believe that some of the most honorable men in the beekeeping business are engaged in rearing queens, and our treatment in nearly all cases has been all that could be desired. Punctuality in answering business letters is a splendid feature in any business; but with the queen-breeder it is an actual necessity, and with few exceptions I have had no cause to complain in that line. Any queens that have not made good have always been replaced at once. With these few exceptions, and in some cases, knowing the generosity of the breeder, I have hesitated to report any mismatings, etc., feeling that I had no real cause to complain, and

knowing that, if I did, queens would come at once to replace any that were not what they should be. In one instance, in common with others, we were much disappointed with the methods of doing business and the poor trashy stock of a certain breeder of Carniolans, so called. Failure to answer letters, etc., is bad enough itself; but when stock is worthless in the bargain, that is a combination none too pleasing to the man who spends good money for queens.

HONEY PUBLICITY.

At the Syracuse convention held a few weeks ago, much of the time was taken up in discussing various plans of advertising honey. A writing-tablet that has been used by New York beekeepers for a number of years was on exhibition, and to the writer this appears to be a good thing. This writing-tablet, as many know, is like the ordinary tablets used for school and other work; but in addition it has a lot of printed literature on both sides of the front cover, telling of the products of the bee. One of the chief difficulties in circulating this tablet, as nearly as I could judge by the discussion, was the matter of getting stationery dealers and others to handle it. It occurred to me that perhaps some of the dealers in beekeepers' supplies could handle this in the regular way with other goods; for with but little alteration the tablet could be used in any place, and I feel sure that our New York friend would not be at all jealous. The changes I have in view are the following extracts which would have to be cut out in order to make the tablet acceptable to all parts of the country.

"Scotland and Ireland produce a superior grade of honey in the Eastern hemisphere, and New York and New England in the Western."

None of us would dispute those claims; but there are other localities producing "superior grades" too. What is there to hinder some wholesale plan being originated to get a tablet like this before the public? It is a plan of advertising that could be carried on at cost; and as these tablets are constantly before children and old people as well, would not the plan be a good paying proposition? This is a live subject, and personally I should be pleased to hear the views of others better qualified to speak on a matter of this kind than I am.

CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.



THE HONEYBEE AND HONEY.

"Is the honeybee a native of North America?"

The honeybee is not a native of either of the Americas if I am correct. I am told a colony was landed in Boston, Mass., in the year 1670, and that they were brought there for a twofold purpose. The prime object was to secure their delicious and health-giving product which is so thoroly enjoyed by nearly every one; and, second, the great and almost universal benefits coming to all localities where they are kept, on account of their unpremeditated work in the fertilization of all blossoms in which nectar is secreted."

"Do you mean to say that the honeybee is a necessity toward the perfection of fruit from all blossoms?"

I do not wish to be understood as saying from *all blossoms*; but, according to close observation for the past 45 years, *all blossoms which secrete nectar* need the honeybee or some other winged insect for their perfect pollination. I am well aware that Darwin, the great naturalist, had nothing to say about nectar secretion in flowers when he said, "The more bees the more flowers; the more flowers the more seeds; the more seeds the more flowers; the more flowers the more bees." This shows that, even tho he may have observed closely, he did not think it as important to mention that there are more of the seed-producing plants which do not need the aid of the bees or any other insects, than there are of those which do—that it is only those which do need the aid of the bees that the bees visit, and that the reason why the bees do so visit is because they are invited thru the bountiful supply of nectar secreted by such needy flowers. This is true of fruit as well as of seeds.

Take the wheat from which our bread is made. Did you ever see a bee at work on its bloom? The reason for this is that it is self-pollinating, therefore no nectar is secreted; and no nectar, no bees. On the other hand, take buckwheat. The bees hover over it till their merry hum is music to the apiarist's ears. Why? Because nectar is secreted. Neither a rustling breeze nor a hurricane could pollinate the blossoms. Among forest trees, the basswood with its thousands of inverted or hanging-down flowers calls for the bees to turn themselves upside down to pollinate them; hence nectar is secreted. On the other

hand, the beech-tree bloom is pollinated with the slightest breeze thru its foliage.

What is applicable to the buckwheat and basswood applies to nearly all of the fruit-trees. Hence we find the apple, pear, cherry, plum, and peach, all secreting nectar when the weather is favorable. In certain places years ago, bees were banished, owing to a belief that in gathering nectar the embryo seed or fruit was deprived of something needful for its full perfection. Later it was found that a lessened or poorer crop resulted, so the bees were invited back again.

"But what about the honey part?"

We are told, and truthfully, I think, that honey is the most wholesome and easily absorbed food known to man. Owing to the peculiar conditions and environments of honey-bees during their period of winter confinement in the hive, their surplus honey, stored by them for the purpose of carrying them thru the winter period, is something entirely different from any other substance. It is already prepared by the bees before it is placed in the cells. When we eat honey we have only to assimilate its varied life-giving elements. This is the only food of which it can be truthfully said that some other animal has specially prepared it for our assimilation, thus precluding the necessity of that labor on man's part.

"That is something entirely new to me. I had looked on honey as the sweetest of all sweets, and so proclaimed when I was offering for sale my extracted product."

We were told nearly half a century ago that honey is not as sweet as cane sugar, altho the different acids it contains gives the impression to the sense of taste that it is sweeter. This accounts for the fact that for hundreds of years honey has been termed "the sweetest of all sweets;" and the question asked, "What is sweeter than honey in the honeycomb?" Here we have the pleasure of the sensation produced by sweetness without the danger of retarding the action of our digestion when honey is eaten in large quantities, as is the case with most of the candy and sugars.

Some object to eating comb honey from the fact that the wax comb is entirely indigestible. But because it is wholly indigestible the stomach makes no effort whatever to digest it. The particles chewed fine are an aid to digestion. Comb honey is the most wholesome, not only of any sweet, but of any food known to humanity.

GENERAL CORRESPONDENCE

AN UNCAPPING-ROOM ARRANGED ON THE GRAVITY PLAN

BY P. C. CHADWICK

I have long thought of giving a plan of my honey-house and extracting-outfit arrangement. This issue furnishes me the opportunity.

I am making no claim that I have an arrangement superior to all others; but I am sure I have one which is far superior to many others. So I give my plans with the idea that they may be of assistance to some, and am looking forward to the possibility of gaining something from the ideas of others.

Gravity plays a prominent part in all the work of getting the honey from the hive

such a manner that when the wheelbarrow strikes the door the weight begins to rise, and allows the door to swing open. As soon as the door is cleared the weight pulls the door shut. The honey is now on the wheelbarrow in the extracting-room ready for work. Usually three supers of eight frames each are wheeled in at a time—two in front and one behind. The frames are taken from the back super, uncapped and extracted, and returned to the wheelbarrow without removing the super. The top super is then extracted in the same manner and set back on the first super extracted, to make way to

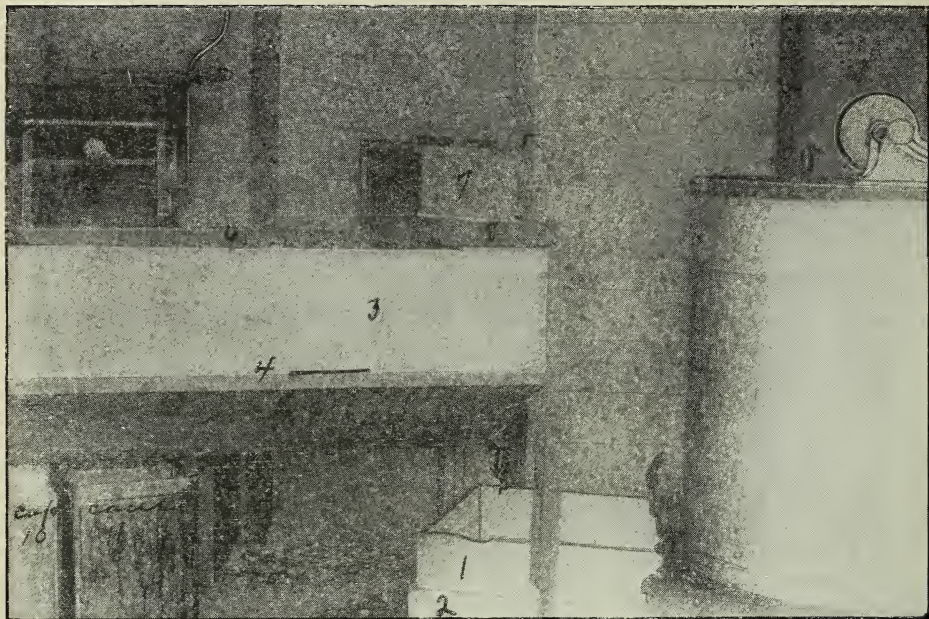


P. C. Chadwick's apiary, showing how the ground slopes down toward the honey-house, and then falls away abruptly behind the building—an ideal arrangement, considering general convenience.

until it reaches the can. Let me first say that my yard is located so that nearly every hive is on higher ground than the honey-house, making the work of wheeling the honey a comparatively easy task. The floor of the honey-house is on a level with the ground at the entrance door, but at no other point. The ground slopes rapidly under the house, to the rear, where the fall has reached a point that will allow the honey-tank to go under the rear of the building as shown in the cut. The honey is wheeled direct on to the floor of the honey-house, the door being connected by a weight and pulley in

the last super of the load. In this manner the entire load is disposed of without lifting a single filled super. If more than one person is engaged in the extracting operations, two wheelbarrows may be used to keep a continual line of supers arriving and departing.

The interior view shown gives an idea of the arrangement of the extracting equipment. The extractor needs no explanation. No. 3 is the uncapping-box, which, as may be seen, has a V-shaped bottom, the draining-screen fitting down into the box to the beginning of the V shape as shown by the



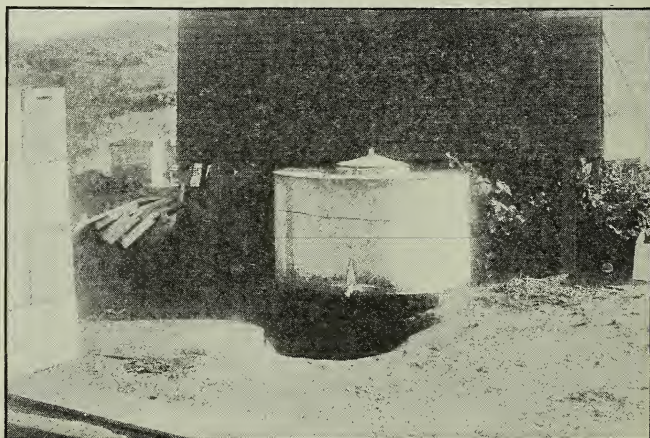
Interior of P. C. Chadwick's extracting-room. The capping-box, 3, has a V-shaped bottom, and is fitted with a screen as indicated by the line 4. The extractor and capping-box both drain into the strainer, 1, 2, from which the honey runs by gravity into the tank below.

dark line and Fig. 4. Board No. 5 fits across the uncapping-box at No. 6, where the notch may be seen for the further end, a like notch being on the near side. This board has in the center a cone-shaped hole, dug out with a gouge chisel to allow the end of a frame a support where it will not slip when uncapping, and also allow the frame to be reversed by simply turning it in the cone. In this way the frame may be reversed by a simple turn of the fingers of the supporting hand without even laying the knife down.

The stove may be plainly seen, No. 9 being the knife-pan with knives ready for use. The knives are in easy reach at all times, and may be exchanged quickly, and often enough to keep the caps coming off rapidly, and with little loss of time. When a frame is uncapped it is set into the extractor, and another taken from the wheelbarrow on the return to the un-

capping-box. The wheelbarrow is supposed to stand close at hand. No. 7 is a rack to hold extra frames uncapped ahead of the extractor when help is being used to turn the extractor during a rush.

No. 8 is a water-pan filled with clean water to remove any honey from the hands or knives that may chance to be encountered. This pan I consider a very essential part of the equipment to insure cleanliness.



Rear view of Chadwick's extracting-house showing the large tank, and place for filling cans under the tank.

Nos. 1 and 2 are the strainer. On the bottom of frame No. 1 is nailed a galvanized screen wire of the finest mesh obtainable in common screening stock. This sets in frame No. 2, resting on a rabbeted edge, which leaves the wire two inches above the bottom of the frame. Frame No. 2 is covered with a heavy piece of tin into which is made a spout forming a large funnel which fits into the pipe leading to the tank below down thru the floor.

The tank may be seen in another picture.

A pair of scales stands under the gate of the tank at a level which will support a sixty-pound can at the right height. The honey is drawn into the can until the beam goes up which is a sign there is a little more than sixty pounds of honey in the can. Now comes the first heavy lifting of the entire operation, as the can must be lifted into its case to be labeled 60 pounds net, and with its partner nailed up ready for the journey to the warehouse.

Redlands, Cal.

ADVANTAGES OF THE CENTRAL EXTRACTING-PLANT

A First-class Carrying-rack for an Automobile

BY W. H. CRAWFORD

By our plan honey from all the outyards is extracted at home, which reduces labor and expense to a minimum, and at the same time allows the beekeeper to be at home most of the time during the harvest. The honey-house is large, and equipped with an eight-frame power extractor, and 1½ H.P. engine, uncapping-can, two large honey-tanks, etc.

The honey is produced in full-depth eight-frame supers above queen-excluders, with seven combs spaced so as to fill all the space without using division-boards. Fifty extra supers are provided and filled with combs or full sheets of foundation before extracting begins. When the honey is ready to extract, as many supers filled with combs as will be needed to make a day's work are loaded on the auto and carried to the outyard. The hives that are ready to extract are located, and one super full of empty combs is placed near each hive so located. The combs in the empty supers are spaced, and an escape-board is put on top of each one of them. One man with a hive-tool pries loose and lifts up the super full of honey, when another man quickly places the empty super in its place and puts an escape-board on the empty super. The first man then sets the full super on top. The quilt and cover are adjusted so as to make the full super absolutely bee-proof so that robbers cannot get into it; for often they make mischief as soon as the bees desert it, if allowed to do so. Now we have a super full of empty combs between the full combs above and the brood-chamber below, so that the bees are escaped into the second story containing the empty combs, instead of into the brood-chamber. Hence not a moment of time is lost to the bees in storing honey in the super, which fact is very important.

The full supers are allowed to remain on the hives over night, giving time for the bees to desert them. Each day in going for the supers of honey, now ready to be carried to the honey-house, other empty supers of combs are carried along, and placed on other hives that are found ready to be extracted in the same manner as already described. Next the full supers now ready to be loaded are loaded on to the auto and taken to the honey-house at home. During this whole time, not a comb was taken out of a super nor a bee brushed off a comb.

The honey is extracted the same day that it is taken from the bees while it is yet warm; for if allowed to remain over a night after being taken off the hives it is twice as hard to uncapp and extract.

By this method we have the same amount of empty combs and supers on hand all thru the season to be used as described above, and they certainly do yield as large profits as anything used in the production of extracted honey.

We work each yard once a week, picking out such hives as are ready to extract and passing over such as are not ready, for another week. Only one super at a time is given each colony; therefore it means the loss of quite a bit of honey to allow the full combs of ripe honey to remain on the hives after being finished.

For hauling the honey we use a platform on the automobile 5½ feet wide and 5½ feet long, made of boards 1 x 12 inches by 5½ feet long, cleated together with strips 2 x 2 inches by 5½ feet long, put together so as to make a solid floor. Three sides of it are provided with five rods ½ inch by 3 feet long to each side, both ends of them threaded and provided with nuts; also both ends of each rod are bent to a

right angle. One end of the rods passes thru holes made in the cleats on the sides of the frame and are fastened with the nuts in a way to allow the rods to turn around. Three flat bars of iron $\frac{1}{2}$ inch thick by $1\frac{1}{2}$ inches wide by $5\frac{1}{2}$ feet long with five $\frac{1}{2}$ -inch holes in each of them are provided, and the other ends of the rods are fastened in them in a way so as to let them turn in them as the other ends turn in the cleats on the edges of the frame. These rods and bars make the sides of the frame and are fastened together at the top of each corner with a latch.

The rear seat of the automobile is taken off, and a small bed $3\frac{1}{3} \times 5$ feet by 9 inches deep is made to fit on the car, reaching up flush with the top of the fenders of the rear wheels.

The frame described above fits snugly on

top of the bed and the fenders of the machine, reaching two inches over the sides of the fenders.

While loading and unloading all three sides of the frame can be let down entirely out of the way by unlatching the corners and allowing the rods to turn half around like a crank, so that the sides of the frame are swinging straight down, entirely out of the way in every respect, leaving a nice smooth floor with not a single thing in the way in loading. Then, like turning a crank half around, the sides of the frame are elevated and fastened at the top corners and not a super can get away while being hauled to or from the outyards. This frame holds twelve eight-frame supers to the tier. We have hauled twenty full supers to the load and fifty supers of empty combs to the load.

Roswell, N. M.

CONCRETE WORK-SHOP, HONEY-HOUSE, AND BEE-CELLAR

337 Colonies Wintering Indoors

BY DAVID RUNNING

My building is 16×40 ft., outside measure, with a bee-cellar underneath, the ceiling of which is 2 feet below the surface of the ground. The entrance to the cellar is in a side hill. The honey-house and shop are on the main floor, and the second floor is a

large storage room. The bridge shown [cover picture—Ed.] drops down for loading and unloading honey or supplies. Notice the pump between the doors. We have plenty of water always at hand—a big help in keeping things clean.



David Running's 16×40 -foot concrete building. The end view of this building and the entrance to the bee-cellar are shown on our cover.



The material in this building, including lumber and cement, cost only \$206.75.

The building is 18 ft. high to eaves from cellar floor, and 25 ft. to peak. The chimney is 29 ft. high, with 9 x 13-inch flue opening at the cellar floor. I built this building myself, so I cannot give you the cost of labor, as it was done at odd times when I was not busy at beework. The total cost of material was \$206.75, as follows:

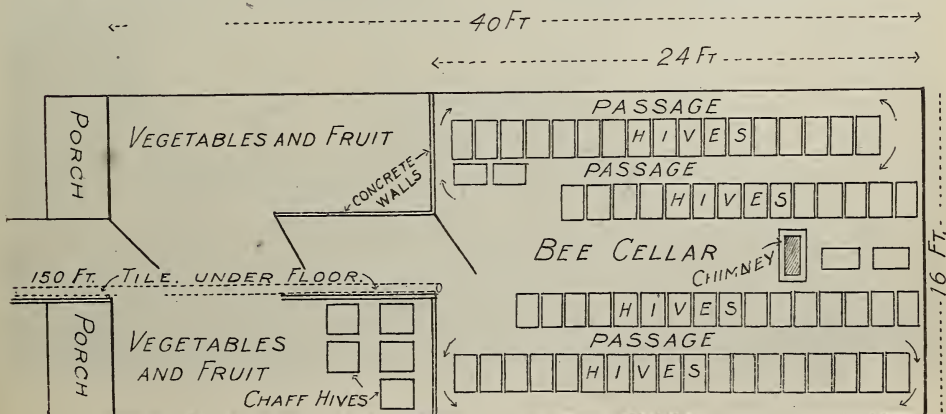
Lumber and shingles.....	\$103.38
Cement	64.81
Nails	3.92
Gravel	4.95
Bolts	2.26
Locks and hinges.....	1.60
Hooks16
Cedar sticks for overlays.....	4.75
Sash, windows.....	9.08
Brick	7.40
Tile	4.50

Total.....\$206.75

The walls are *six inches thick*. Concrete was made by mixing one part of cement to six parts of gravel. As many stones were put into the forms as possible without having the stones touch each other or come closer than $\frac{1}{2}$ inch to the surface of the wall. This accounts for the small amount of cement used.

The door and window frames in the cellar were made of 2 x 6 oak plank, and hemlock was used for those above the ground.

The cellar ceiling joists were put in $6\frac{1}{2}$ ft. from the floor, and covered with cheap lumber, one foot of dry sawdust placed on top, then an air space of about one foot, then another set of joists covered with matched flooring. The shop ceiling is $7\frac{1}{2}$ ft. from the main floor with matched flooring above. The hip roof gives a large roomy upstairs for storeroom. The ceiling



over the vegetable-cellar in the front part is single floor without sawdust covering. This gives us a 9-ft. ceiling in the extracting-room above.

The temperature in the bee-cellar (when bees are in) remains between 45 and 49 degrees F. The outer vegetable-cellar stays about 6 degrees colder with the middle doors open as shown in the plan.

The bees are placed in the cellar in long tiers and piled five colonies high with 2 x 6-inch plank on edge underneath. There is just room for a small man to get around between the tiers, so all colonies can be inspected at any time except two piles (ten hives), behind the chimney. We have 312 colonies in the back or bee-cellar now, and 25 chaff hives in the front cellar (see drawing). The cellar is the best place for colonies in the regular chaff hives in this northern locality. We do not expect to lose a

single colony of bees this present winter. Before putting the hives in the cellar all entrances are enlarged to $1\frac{1}{4}$ inches by the width of the hive by inserting two wedges between the sides of the hive and the bottom-board. The cellar is always so dry that we can light a match (the eight-day kind) on the floor or walls at any time. We have wintered colonies (nuclei) in this cellar when the bees filled only the space between two combs. When putting bees in, also when taking them out, the cellar is kept full of smoke; but no smoke is used on the individual colonies. This is our twelfth winter for using this cellar; and since we learned how to prepare our bees for winter (about nine years ago) our winter loss has been less than one per cent. All covers are left sealed on in the cellar, and are *not loosened before fruit bloom in spring.*

Filion, Mich.

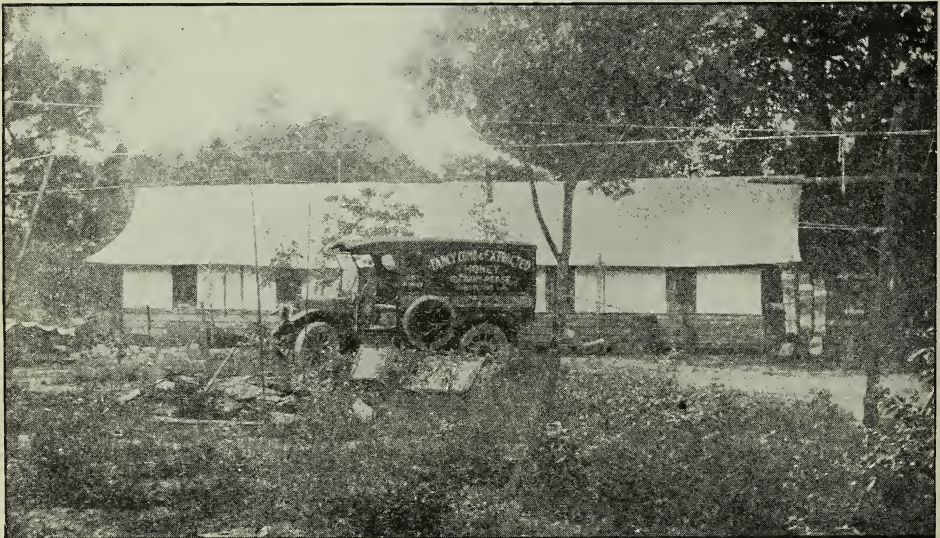
A COMFORTABLE WORK-TENT

BY G. FRANK PEASE

The tent shown in the illustration is my living-tent, containing four rooms and a screened-in gallery. The floors and side walls are of wood, having two windows for every room, that swing in, and screens for each. This tent is one of seven, and is as comfortable as a wooden house.

The automobile, a Studebaker, has been

driven nearly 5000 miles in eight months, with less than ten dollars for repair bill. It has carried heavy loads nearly half the distance. I have drawn about 400 colonies of bees, a carload of bee supplies, lumber, wire fence, hogs, goats, and even a horse, besides hauling all my supers and honey from yard to yard. It will hold 36 colonies



G. Frank Pease's work-tent, auto truck, and solar extractors at his Louisiana location.

at one load, and is indispensable for handling the twelve apiaries scattered in a thirty-mile circle.

I find that it is cheaper to bring all honey to the home central yard to extract than to move extractors, etc., from yard to yard, because the honey has to be hauled to market anyhow, and it is just as well to

carry back empty supers as to go empty; besides, it saves building extracting-houses at all yards.

The solar extractors shown are home-made, and melt cappings in a short time, and the wax is hot enough to run into cakes.

Michigan.

WHY I PREFER THE HOUSE-APIARY

BY F. C. BARBER

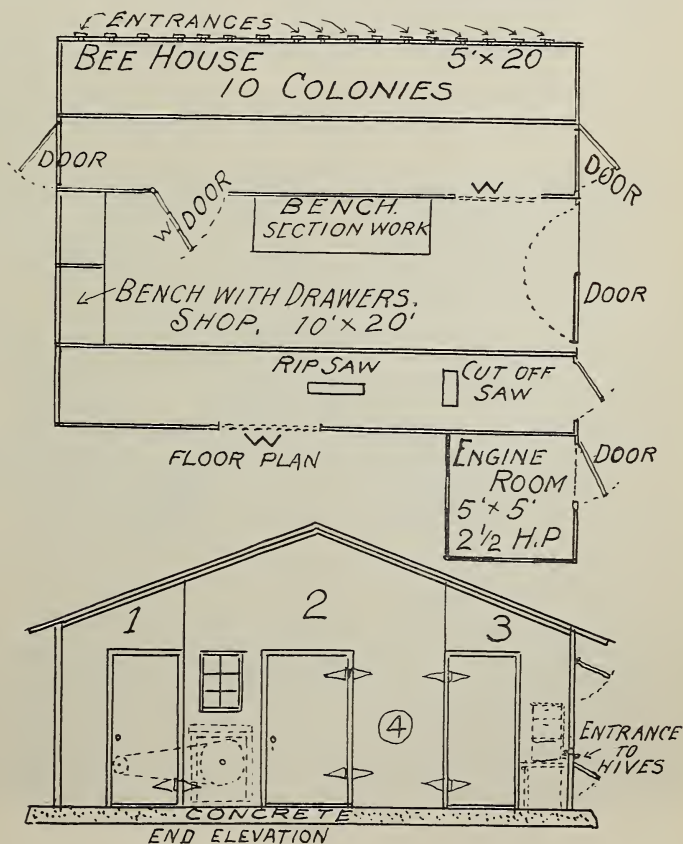
The drawings show the front and floor views of my shop, honey-house, engine-room, and house-apiary. No. 2 in the sketch shows the shop, which is 10 x 20 ft., and has a concrete floor. No. 1 shows the engine-room, 5 x 5 feet, which has a 2½-horsepower engine.

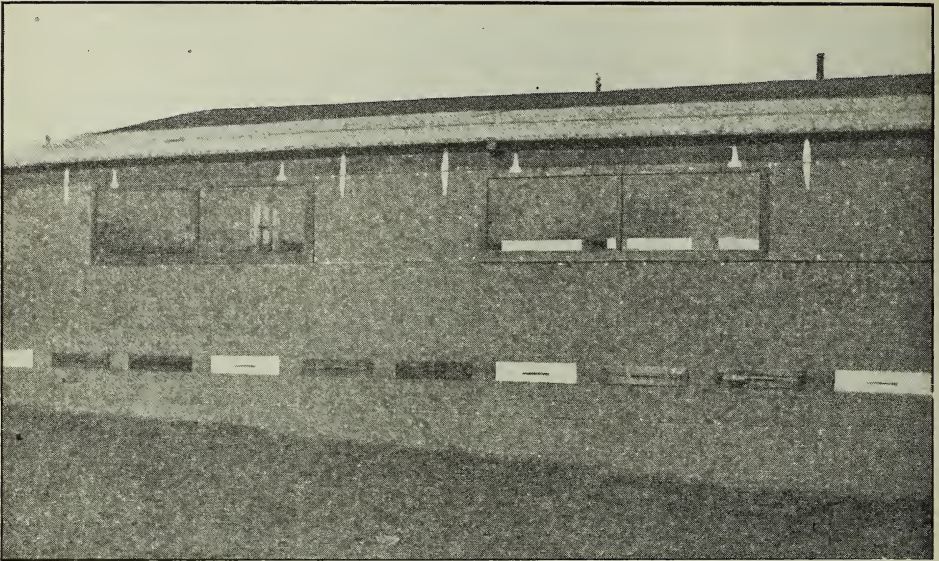
The work-bench is clearly shown. This is three feet wide, and runs the length of the shop. In this bench there is a cross-timber, half way from the floor to the top of the bench, where my shafting hangers are bolted. The belt from the gas-engine runs thru two small holes thru the side of the building into the shop. There are two circular saws, one a cutoff, and one a rip saw.

The other bench I use for section work only. There is also a bench at the end containing eight drawers, where I keep foundation, sections, etc. The shop has four windows and two doors, one of which leads from the shop into the house-apiary.

The house-apiary is an addition built on to the south side of the shop. This building is 5 ft. wide, 20 long, and 7 high at eaves, 9 ft. at the side of the shop, containing a hive-bench 20 inches high and 24 inches wide. On top of this bench there are two sheets of galvanized iron 10 ft. long and 24 inches wide, on which my hive-bottom boards

rest. I use the wide space of the bottom-board the year round. The front ends of these boards are placed tight against the side of the apiary-house. The opening thru the building is cut the full size of the entrance of the bottom-board. I place the hive on the bottom-board, which leaves two inches of the front of the bottom-board, which I cover with a piece of wood 2 inches wide and as long as the hive is wide. The hives are placed between 7 and 8 inches apart. The entrances on the outside have a two-inch frame all around them. These





Addition built on the south side of E. C. Barber's shop, 20 feet long and 5 feet wide. It is covered with two-ply paper, granite finish. Cost for material and labor, \$22.50. Ten colonies are being wintered inside this building, temperature 45 to 50 F. In hot weather the side can be opened to give plenty of ventilation. There is also a door in each end.

are painted different colors—red, white, and green, alternately.

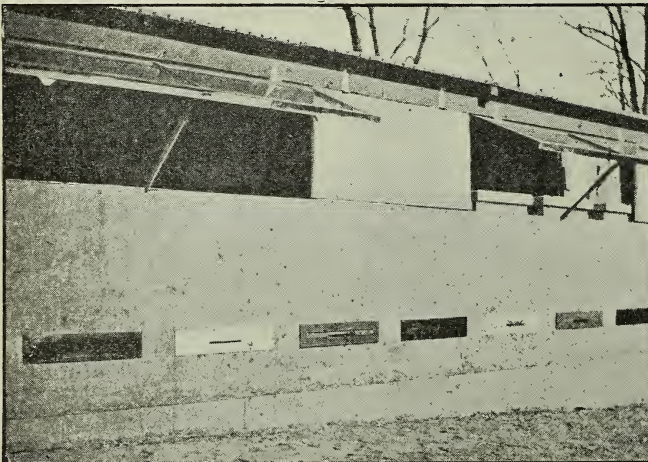
Just under these entrances is an alighting-board 12 inches wide and the length of the building. This is set at an angle of 45 degrees with the side of the building. This alighting-board was placed after the photos were taken.

There are two long windows and three doors. These swing out at any angle desired, to admit air circulating in extremely

hot weather. They also give light when working with the bees. The bottoms of these windows are placed 24 inches above the entrances and alighting-board, which is about the same height as the hive with two supers on. These windows can be opened and closed from the inside of the house. There is also a door at each end. These can be opened for ventilation in very hot weather. A hinged door, 20 inches wide, is fastened on to the back of the hive-stand.

The door swings up back of the hive-stand, and is used for the purpose of holding planer - shavings in packing bees for the winter, giving a space of 2 inches in front of the hives, and about three inches in back, and seven inches between each two hives.

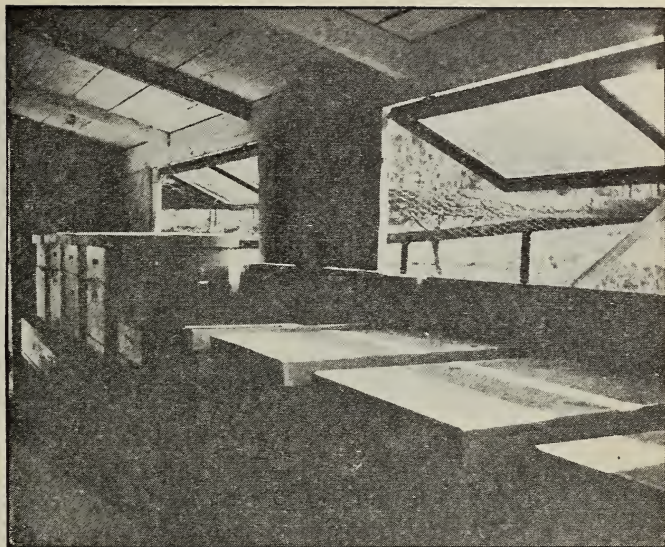
In the spring this door is unhooked and swung down so that the edge comes even with the floor, and the shavings on the galvanized iron can be removed very easily. The interiors of these buildings are painted with two coats of



Close view of Barber's house-apiary, with ventilators open.

white paint, and the exteriors are covered with two-ply granite-finish roofing-paper. The frames are 2 by 4, covered with hemlock boards planed on the inside so that they can be painted easily.

I prefer the house apiary instead of the outside yard for several reasons. First, you can work at your bees and not be among those flying in the air, especially if the windows in the house are closed. What few bees fly from any hive you are working on inside of the house, instead of trying to frighten or sting you will fly to the window to get out. Second, you do not have to carry the hives in and out of the cellar in the spring and fall, or move them to their winter quarters. Third, your bees are always protected from the snow, rain, and winds. Fourth, they are at leisure for a flight in the winter any time when it is warm enough, such as the past few days have



Bees wintering in a house apiary.

been, when the thermometer was around 70. Fifth, in this house-apiary I can see a big difference in spring brood-rearing; also protection during cold nights, when bees are working in sections during the summer.

I cannot see that my bees make mistakes in finding the entrance to their own home. I think it is due to the different colors



E. C. Barber's apiary out of doors.



Class in beekeeping at the Ontario

with which I have painted my entrances. I can feed my bees in early spring or late fall and not have any robbing going on, because I feed inside the house with an empty super on top of the hive, with five-pound honey-cans with covers perforated. I do not have as much robbing and trouble with the bees in the house as I do with those that are in the yard apiary. The bees which are in the house seem to be much further advanced at the beginning of the honey-flow than those in the yards, especially in bees and brood.

I get more honey from bees in the house than I do from those in the yard. I think it is due to the protection of the house in cold nights. I have found at midnight that the bees outdoors which were working in

sections during the day were not building comb in the sections, due to the nights being too cold, while those in the house were as busy as any bees could be.

I intend to build another house, which will be 40 by 7 ft., with one side to the east and one to the west, with two rows of hives the whole length, one on each side. This house will hold 40 colonies. I shall not change the plans of the hive-stand, windows, and entrances, because I like this design very much.

The expense of a structure like this will not be as much in the long run as hives, winter cases, shavings, building-paper, packing-quilts, or double-walled hives, and the extra labor it takes to care for the bees in winter and spring.

Framingham, Mass.

SIXTH ANNUAL APICULTURAL SHORT COURSE IN ONTARIO

BY MORLEY PETTIT

This short course was held at the Ontario Agricultural College, Guelph, January 11 to 22, 1916.

Owing to war conditions a large attendance was not anticipated. On the opening day, however, there was an attendance of twenty-seven (later increased to thirty-five) young men and a few ladies. Practically every one of these had been previously engaged in beekeeping. They included beekeepers owning one hundred or more colonies, sons of successful beekeepers, and in one case a beekeeper's hired man. Many different parts of Ontario were represented, also Quebec and the State of Michigan. The get-together spirit was much in evidence, and the interest shown at all the lectures was very gratifying.

It is the purpose of this course to give the underlying principles of bee nature, a knowledge of which is essential to successful bee management. Fifty-nine lectures and demonstrations were given, covering the different phases of beekeeping. Typewritten copies of each lecture outline were distributed to the class so the main points could be followed closely and carried home for future reference. As far as possible the lectures were illustrated with stereopticon views and the actual objects under discussion. Members of the class were also given laboratory practice in hive construction, and a visit was made to the apiary of a successful beekeeper in the neighborhood of the college.

One important feature of the work was



Class in beekeeping at the Ontario Agricultural College, Guelph, Ontario.

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One important feature of the work was

the display of aparian apparatus and implements. The educational value of this was clearly demonstrated by the keen interest shown by those present.

In conducting this course, the Provincial Apiarist, Mr. Morley Pettit, was assisted by F. W. L. Sladen, Apiculturist, Central Experimental Farm, Ottawa; F. E. Millen, B.S.A., Lecturer in Apiculture, and State Inspector of Apiaries for Michigan; F. W. Krouse, President of the Ontario Beekeepers' Association; James Armstrong, Selkirk, Vice-president of the Ontario Beekeepers' Association; also some of the apian inspectors of Ontario. Lectures on allied subjects were given by other members of the college staff. Mr. Frank C. Pellett,

State Apiarist of Iowa, paid the class a visit, and lectured on beekeeping conditions in his state.

Throughout the course there were many kind words of appreciation by members of the class, and on the last day a vote of thanks was tendered Mr. Pettit and the other instructors for the valuable information received and the systematic arrangement of the work.

It is proposed to hold a summer school for beekeepers at the Ontario Agricultural College some time in June, when bees are active and apiary practice will be possible. Persons interested should write at once for particulars to Morley Pettit, Provincial Apiarist, Guelph, Ontario.

COMPLETE SPECIFICATIONS FOR A 12 BY 24-FOOT BUILDING

BY HERBERT LYON

This design is for a building 12 x 24 feet, and 8 feet from bottom of joists to top of plate. The floor joists are 2 x 6 inches and 11 feet 8 inches long, laid 16 inches from center to center. Two 2 x 6-inch by 24 feet spiked to the ends of the joists complete the floor frame. (See No. 7 in the illustration.) A 4 x 6-inch by 24-ft. girder properly supported lengthwise under the center of the frame should be used.

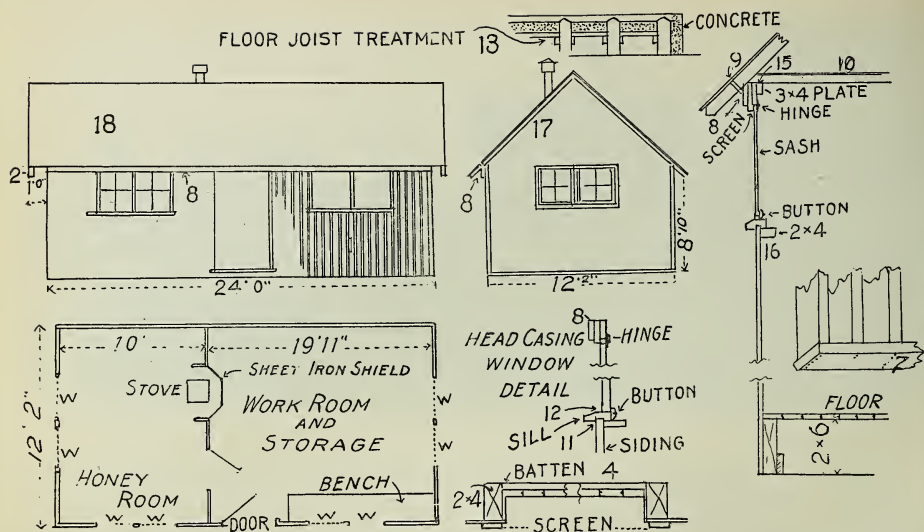
The plates are of 3 x 4-inch material halved together at the corners, and placed 8 feet from the bottom of the floor joists to the top of the plate. (See No. 15.)

Two 2 x 4-inch door studs (No. 4) extend from the top of the floor joists to the bottom of the plate (2 feet 10 inches between studs). A 2 x 4-inch level with the under side of the window sill (No. 16) extends from the outside of one door-stud around

the building and finishes against the second stud. Corner posts and braces can be used or may be dispensed with. The siding is 1 x 10 inches, 16 feet long, matched barn boards, laid vertically. The joints can be covered by $\frac{3}{8}$ x 1 $\frac{1}{2}$ -inch battens, painted a contrasting color and applied after the siding is painted.

The outside door and window casings are of 1 x 4-inch white pine or cypress set back from the edge to form a rebate for screens. Run a 1 x 6-inch fascia along the long sides of the building, the top edge of which is even with the top of the plate. This will form the head casing for windows and door.

The rafters are 2 x 4-inch, placed 16 inches from center to center, 8 inches to 1 foot pitch. These should be notched over the fascia and seated on the top edge of the fascia ends of siding and plate.



Sheath the roof with North Carolina pine roofers. Cut the ends an even foot beyond the siding. Cover the sheathing-boards with rubberoid roofing.

Cut window openings $\frac{1}{2}$ inch less than the size of the sash on sides and top. Allow for sill at the bottom. Note the plowing necessary to receive the siding. (No. 11.)

The windows are four light barn sash, 2 x 2 feet 8 inches, hinged at the top, and rabbeted at the bottom to receive a lip in the sill. They should be cased in the sides and top with stock the same thickness as

the sash. If the house is built over a beecellar it would be well to lay a double floor, the under one diagonal. If desired, a concrete floor can be laid, but I do not recommend it.

Build a board partition to separate the rooms. An opening can be made to admit a stove. Protect all woodwork near by with sheet asbestos. A movable sheet-iron shield can be used to shut off either room when heat is wanted in only one room. Use galvanized-iron funnel for chimney.

Mount Kisco, N. Y.

AN EXTRACTING-HOUSE ON WHEELS

BY T. E. HOLMES

One of the great problems that confront the apiarist who has his bees in outyards run for extracted honey is an economical extracting-outfit. Some erect a building at each yard, and haul the equipment from yard to yard. The more yards you have, the more expensive this plan becomes.

I have visited beekeepers, read articles on this subject, and have come to the conclusion that a portable extracting-outfit is the only feasible solution of the problem. The one that is the subject of this article is 16 ft. long, 8 ft. wide, and 6 ft. high. The framework consists of two-by-fours covered with a light canvas. The extractor is an eight-framer, run by a gasoline-engine, both being placed clear to the front end, leaving no vacant space. The extractor is in the left-hand corner, and the engine sits directly over the front axle of the wagon, where it is evenly balanced.

The extractor is placed on the floor. A pipe runs from the gate of the extractor thru the floor, and then to a tank outside. This does away with all handling of honey while the extracting is going on.

The engine is a $2\frac{1}{2}$ -horse-power Stover. It is larger than necessary, but it is run at a low rate of speed, and consequently the vibration is reduced to a minimum.

We use steam uncapping-knives.

In regard to an uncapping-box, we have solved the problem to my entire satisfaction. To my knowledge it is the only one in use; and if it appeals to any in the beekeeping fraternity they are perfectly welcome to use it. It is simply three or more trays made any length and width most convenient. The trays used in this outfit are made of 1 x 6-inch boards, two feet wide and three feet long. Heavy wires nailed on the bottom and then a sheet of

tin with thin strips between the screen and tin. This is to give a clear space for the honey to run to the lower end, where a bucket is placed to receive it. The cappings can be only six inches thick in each tray. With such a thin layer, practically all the honey drains out over night. When one tray is filled, another is placed directly on top of the filled one. When not using the steam-knife, the blade is shoved into the cappings where the steam helps to warm the honey so it drains faster. I had only about ten gallons of honey left in the cappings, which yielded 200 pounds of beeswax.

This outfit is owned jointly by Messrs.

Koger, Biddick, and myself. With it we extracted twelve different yards twice.

Meridian, Idaho.

[A year or so ago some one suggested the use of capping-trays somewhat similar to those described by our correspondent. We felt at the time that the idea was sound; but to our knowledge no one else has tried it.

Is there any objection to the plan? If so, we do not see it. Such trays would be easy to make, and inexpensive. If a beekeeper found that he did not have capacity enough, he could simply make a few more trays. We hope more of our readers will try these trays, and report.—Ed.]

AN ELEVATOR IN THE HONEY-HOUSE

BY A. N. CLARK

I have recently designed a freight elevator for a beekeeping friend who stores his empty hives, supers, combs, etc., on the second floor of his building, and has found it a laborious task to carry them up and down stairs each season.

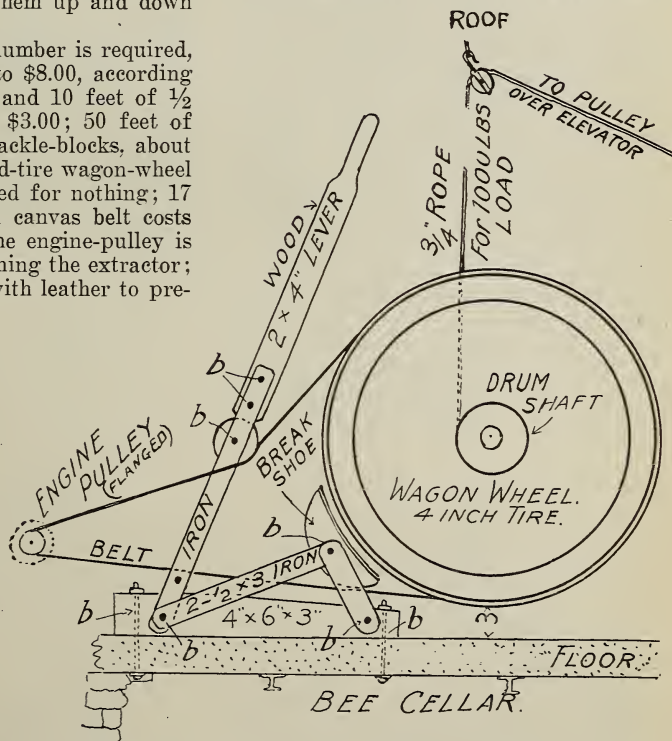
Less than 200 feet of lumber is required, which would cost \$2.00 to \$8.00, according to location; nails, bolts, and 10 feet of $\frac{1}{2}$ x 3-inch iron bar, about \$3.00; 50 feet of $\frac{3}{4}$ -inch rope and three tackle-blocks, about \$2.75. A discarded broad-tire wagon-wheel can sometimes be procured for nothing; 17 feet of four-ply stitched canvas belt costs about \$2.00, and the same engine-pulley is used that is used for running the extractor; but it should be lagged with leather to prevent excessive slipping, and flanged. Total cost of materials will range from \$10 to \$15.

The sketch shows the end of rope attached directly to the bail of the elevator, which answers the purpose of lifting light loads like empty hives; but if used for hoisting cases of honey and other heavy materials it is better to attach a tackle-block to the bail, and hitch the end of the rope to a rafter or beam overhead. Such a hitch requires more rope, but develops more power and moves only half as fast. Cutting down on the speed is desirable, as with a high-speed engine of, say, 500 revolutions, the elevator

would run about 40 ft. per minute with the direct hitch.

Lansing, Mich.

[Our artist, Mr. Murray, suggests that



the elevator could just as well be arranged to run down into the basement in case bees are wintered in the cellar; accordingly he made the drawing to show this feature.—Ed.]

THE WINDOWS OF THE HONEY-HOUSE

BY B. BLACKBOURNE

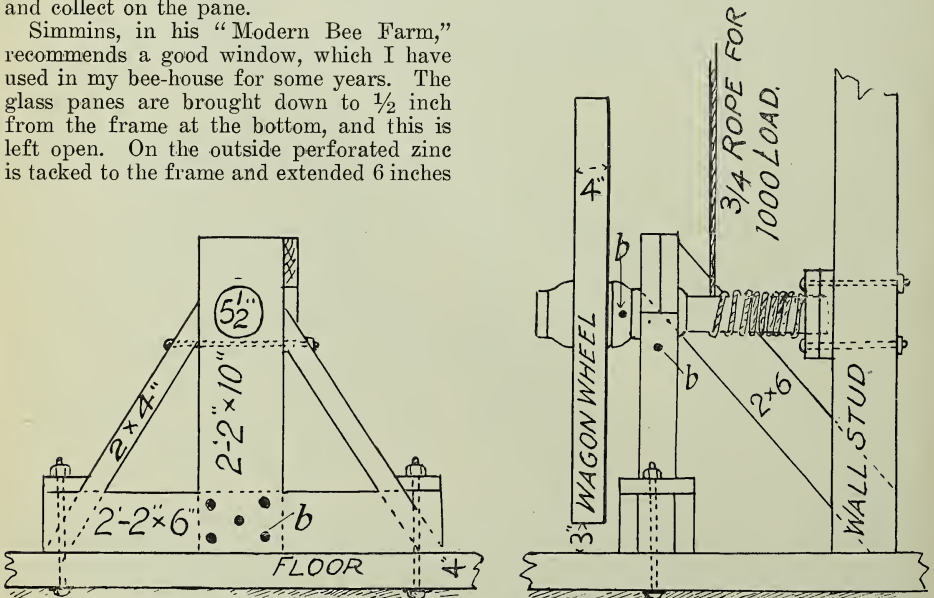
An important part of the honey-house is the window; and altho by the superficial observer it may be dismissed with scant consideration, a little thought spent upon this one item alone when planning a honey-house will be amply repaid by the convenience afforded later.

Before discussing different types of windows especially suitable for honey-houses, let us consider what are the particular requirements of such windows. These are, to admit light; to admit air without allowing bees to enter; to clear the honey-house of bees trying to get out, *without admitting those attempting to get in.*

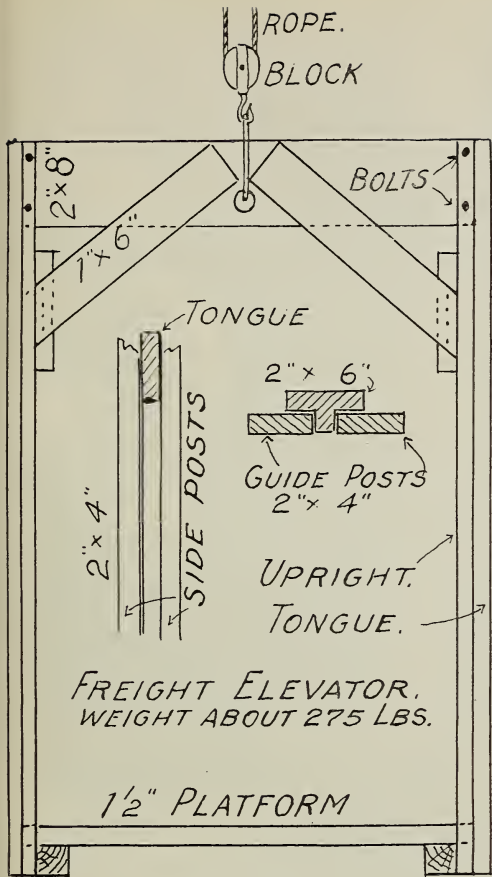
The usual method employed is by the use of wire cloth. This is tacked outside the window, and bee-escapes are fitted at the top corners or else the wire cloth is carried six inches above the opening, and the upper border held out a quarter of an inch as suggested in Dr. Phillips' "Beekeeping." In both these methods it is necessary for the window to be open; and unless Dr. Phillips' sliding sash is used the bees are likely to collect on the window-pane, and many will not find their way to the wire cloth at all. The ordinary sash window is certain to be a nuisance, and a casement window cannot be used unless it is made to open inward, which is inconvenient, and even then bees will get back of the window and collect on the pane.

Simmins, in his "Modern Bee Farm," recommends a good window, which I have used in my bee-house for some years. The glass panes are brought down to ½ inch from the frame at the bottom, and this is left open. On the outside perforated zinc is tacked to the frame and extended 6 inches

up the front, and ⅜ inch from the glass. The bees fly against the window, fall down, pass thru the opening, crawl up the zinc, and escape. During a honey-flow bees escape well by this method; but if a sudden check comes while one is extracting, or while there is honey in the house, the bees scent it from the outside, and in a comparatively short time find their way down the zinc and into the house. Wasps frequently lead the way, as they are very much quicker than bees in finding an opening; but once the bees have found the way in they don't forget it in a hurry. Very soon the whole apiary is in an uproar; bees inside pass the stolen honey thru the zinc to those outside, and, owing to the hundreds inside buzzing up and down the windows, clusters very soon collect in the top corners. Owing to this trouble I made removable strips of wood with which to close the openings during extracting time, or while I had honey in the house. Then there was the trouble of getting the clusters of bees out in the evening. With this style of window, too, there is another danger. When handling queens in the house it is quite possible to lose the queen, owing to a momentary carelessness, and she will very likely get out before she can be caught. Then, too, the window cannot be opened for ventilation.



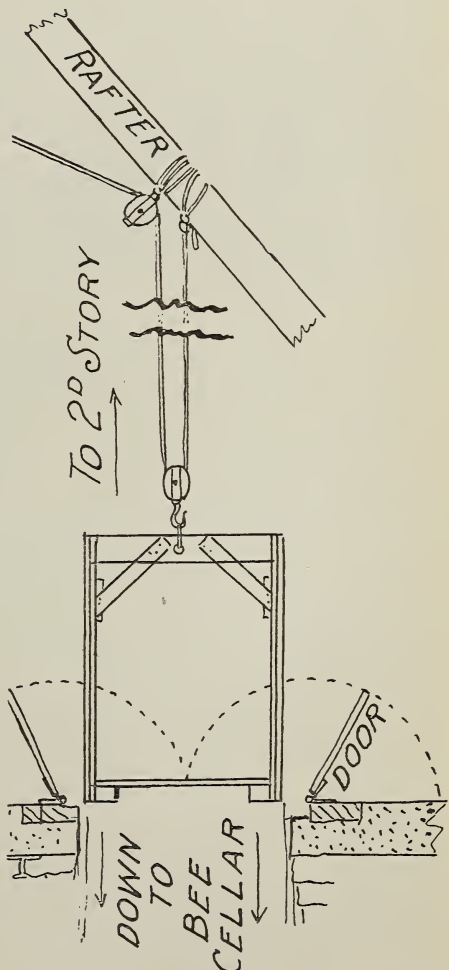
Details of clutch and brake for operating Clark's honey-house elevator.



chance of their doing so when the operation can be carried out so quickly. The disadvantage of this window is that it must be kept closed, as wire cloth cannot be fixed outside.

Some beekeepers, I believe, advocate openings for ventilation covered with wire cloth, quite apart from the windows, to admit light. If, then, a few bees collect inside, the window can be opened momentarily to let them out without danger from stray bees outside getting in, which bees will be busy around the ventilation openings. But this means more expense and complication in the building itself.

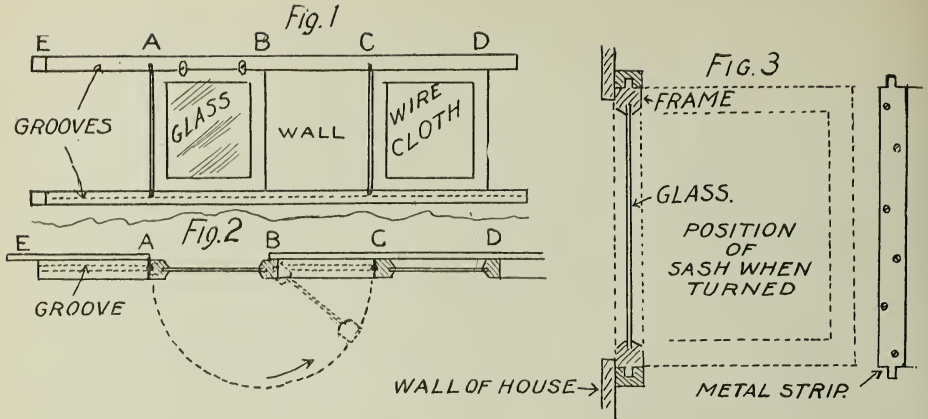
I have devised a window which I think fits the bill exactly, altho I have not yet had the opportunity of testing it. The



I have found (and other beekeepers have remarked on it in GLEANINGS) that it is a mistake to allow bees unavoidably carried into the bee-house, or that have entered by the door, to return at once to their hives. One such bee returning full of stolen honey to its hive when no honey flow is on will set the whole apiary in an uproar; thousands of bees will be buzzing around the windows and door, trying to get into each other's hives, so that robbing may be started. It is, therefore, a better plan to retain all such bees in the house, where they will cluster on the windows, and some expeditious method is required of turning them out in the evening.

Mr. Isaac Hopkins' suggestion for the honey-house window is a good one—viz., that the window shall be hung centrally, so that with half a turn it can be reversed. Bees usually collect and cluster in one of the top corners. One turn, and the whole lot are outside; and, even supposing any are trying to get in, there is very little

Artist Murray's suggestion of letting the elevator in A. N. Clark's honey-house run down into the bee-cellar.



window should be made of one sheet of glass in a frame of good thickness (this to allow ample room for bees to cluster inside the frame against the pane), and hung from one side like a casement window; but instead of using hinges a flat piece of iron of the same width as the thickness of the frame is screwed on, this iron projecting an inch or two above and below the frame, and rounded. The projecting portions slide in grooves cut in a length of wood nailed above and below the opening. Fig. 1 shows the window in position. The bees collect inside. All that is necessary to turn them

out is to slide the window along to the position BC, so that the back part moves from A to B, and swing the window around on the point now at B—see No. 2. A similar frame should be made for the wire cloth for use in warm weather. Always slide the window along before swinging around, then there will be no danger of crushing bees before the window is in its new position. When ventilation is needed, slide the window along to position EA, and wire-cloth frame to position AB, and manipulate as before.

Hoo, Minster, Ramsgate, Eng.

A SIDE-HILL HONEY-HOUSE

Three and One-half Feet Difference in Floor Levels of the Two Rooms

BY E. S. MILES

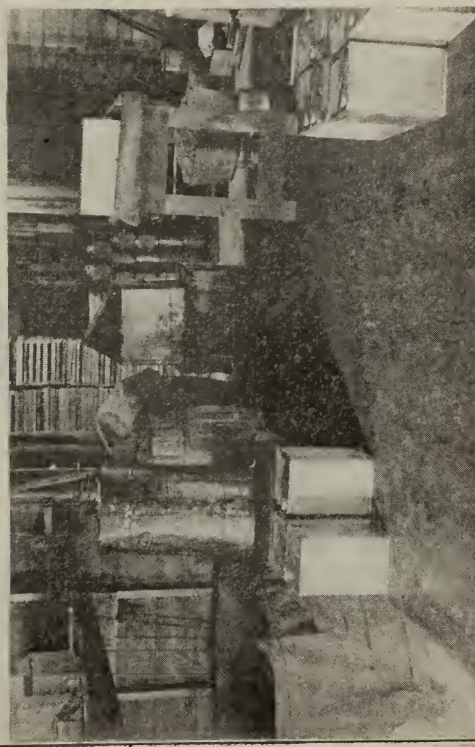
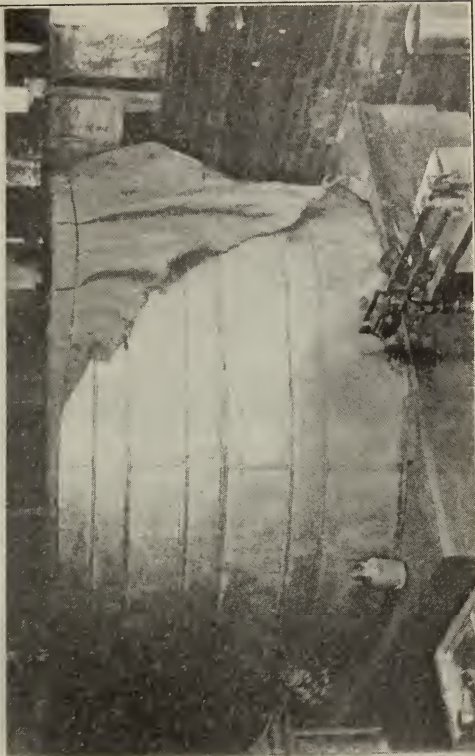
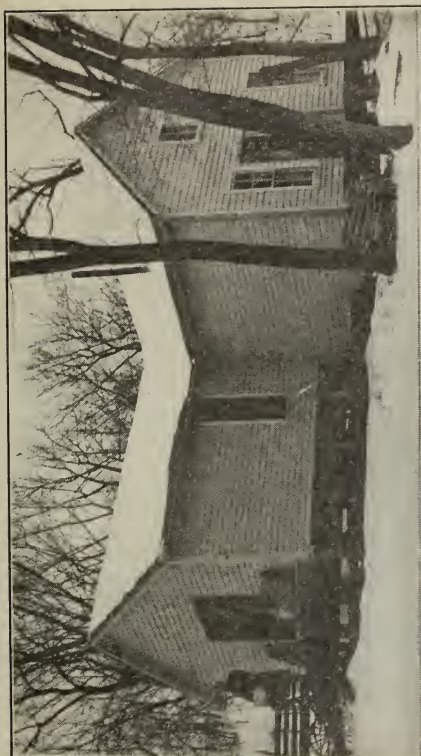
Our honey-house is located on ground sloping considerably, about $3\frac{1}{2}$ ft. drop in 16 ft. The main room, which opens to the southwest, as shown in the first view, is 16 x 48 ft., with sides 9 ft. high. The addition, or ell, is 12 x 18 ft., with 12-ft. sides. The roof of the whole building is level; but the floor of the ell is 3 ft. 6 inches lower than the floor of the main room. The trees shown at the left are well back toward the other end of the building, and some of them are 100 feet or more from the far end, so that we have a place for our home apiary well away, and partially behind the building from the platform where we load and unload, as shown. There is a door also in the back for use in working with the home bees.

The third picture shows a part of the main room facing the door. The door is closed, and does not show in this picture, but is directly on the other side of the work-table, with the full-depth super upon it. This cut shows about one-half the width

of the main room. The part to the right, not shown, is piled full of supers. At extracting time the space occupied by the piles of bottom-boards, and the 10-lb. pails, is used to store the filled extracting-supers as brought in while extracting.

There is also a window in the main room, which does not show in the picture, between the extractor and the piles of bottom-boards, which, when uncovered, gives ample light for uncaping. It is covered in the picture, as it let in too much light to show some of the other articles properly. The honey-tank, which is 36 inches high, holds 4800 lbs.

A rope may be seen behind the tank in the third picture, which is attached to the wall at one end, and runs down thru a pulley attached to the platform on which the tank rests, and up and around a windlass attached to the wall, so that, when the honey gets low in the tank, it can be tilted up toward the front so as to expedite the emptying.



E. S. Miles' side-hill honey-house having two rooms, the floors of which are at different levels.

A floor can be seen at the left, about three feet above the tank, on which can be noticed some pasteboard boxes. This floor is in the ell, and makes a loft that opens into the main room, and is up about $4\frac{1}{2}$ feet from the floor of the main room. It makes a convenient storeroom for the almost innumerable articles connected with a well-equipped bee business that are used only occasionally.

The end of the main room at our back, as we face the third view, is equipped with a full window in the center, and the door before mentioned; also a half-window on the side near the door. We have a table in front of the window, where the section honey, mostly from the home yard, is sorted, scraped, and graded. It is then set on covers, or escape-boards, and transferred to the floor near the tank and extractor.

At the right, and back, as we face the last picture, are steps ascending to the main floor; and across the side of the ell opposite the tank is the workbench for all carpenter work necessary. At this bench we nail the shipping-cases and case the section honey, while the extracted, when filled in'to the cans or pails, is usually set back on the main floor, to be cased up and loaded from the door.

From the above, it will be seen that we have a honey-house with a door handy for use with the home yard, and also two doors with platforms of suitable heights to load wagons without lifting, on the two ends furthest from the beeyard so that, in going and coming in outyard work, we have little trouble from bees. It is made with four 4 x 6 sills set on substantial posts, resting on concrete blocks, with 2x6 joists 16 inches apart, and yellow or hard pine flooring.

The sides of the building are of 2 x 4 studding, 24 inches apart, boarded with shiplap, then papered and sided with regular 6-inch house siding. The roof is made of 2 x 4 rafters, 24 inches apart, sheathing and shingles. It is bee, fly, and mouse proof. I don't remember the cost; but I think the material was about \$300, or may be a trifle more. We built it ourselves, and the bees paid us our wages as well as for all the material and all that's in it and the ground it stands on.

A building this size will handle the crop from 300 colonies without serious crowding. By using a cheap shed for empty supers it could be made to handle the crop from 300 to 500 colonies.

Dunlap, Iowa.



Novel arrangement of work-shop as used by H. B. Phillips, Auburn, Me. Photographed by Inez A. Beals, Lewiston, Me.

SOME ADVANTAGES AND DISADVANTAGES OF A HOUSE-APIARY

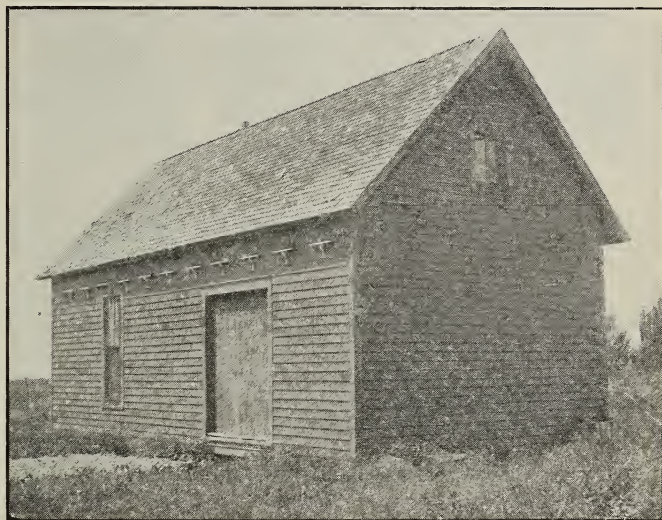
BY BENJAMIN C. AUTEN

To keep colonies of bees in a house-apiary, one precaution is absolutely necessary—the passageways from the hives to the open air must be bee-tight, and carefully maintained so. This makes it necessary to nail the hives firmly to the floor, and to nail solidly any part of the passageway liable to get dislodged. Even a careful explanation of the reasons might not be convincing; but a trial of a carelessly constructed bee-passageway will be.

There are some advantages in keeping bees indoors. They are less excitable to work with than out of doors, apparently not considering the opening of the hive much of an intrusion. On the other hand, they are not easy to get away from in case they do stampede. Another advantage is, they can be worked with in all kinds of weather, thus permitting the utilization of time that otherwise might be unavoidable. Another, high winds do not scatter the hives in pieces over the prairie.

There are a good many disadvantages, however, some of them perhaps trivial; but even trivial disadvantages have great weight when an operator has an overburden of

other difficulties. Entrance manipulations are largely barred, as the outside opening must be at some considerable distance from



B. C. Auten's house apiary, showing the hive entrances just under the eaves.

the hive, the hive of necessity standing back some distance from the inside of the wall to give opportunity for handling supers, etc.

All young bees falling off the frames indoors are irretrievably lost. That may be the case also in outdoor handling; but the loss is not noticed, if it occurs, as the lost bees crawl out of sight at once.

It is next to impossible to hive a swarm indoors, as the bees take up their quarters



A close view of the entrances, with the bees clustering out.

mainly on the outside of the hive. If the hive is taken out of doors to hive the swarm in it, it is then a decidedly nasty job to get the hive placed in position indoors with the bees in it, partly because a large part of them will not be in it even then.

With bees kept in a building, unless the entrances are at a considerable distance from one another, the bees will mix from hive to adjoining hive on the outside wall of the building, then all go into the stronger hive, thus draining the weaker hives.

I had my bees several years indoors, and about two years out. Now that they are

out, sometimes I wish they were back in; but when they were in I wished most of the time that they were out. One reason for wishing them inside is, I would not have to worry about marauders interfering with them, and perhaps leaving the hives torn up in winter time when the bees might perish from my being ignorant of their distress.

Carthage, Mo.

[Mr. Barber has overcome the tendency of the bees to mistake their entrances, and he also provides large windows so that those that get inside the building can find their way out. See his article, page 193.—Ed.]

GARAGE AND HONEY-HOUSE COMBINED

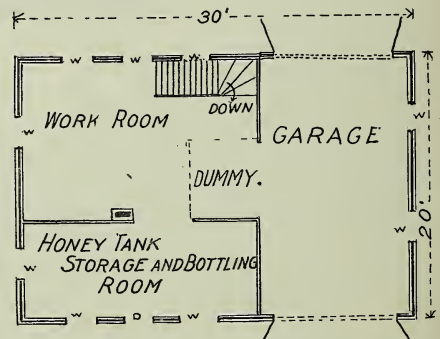
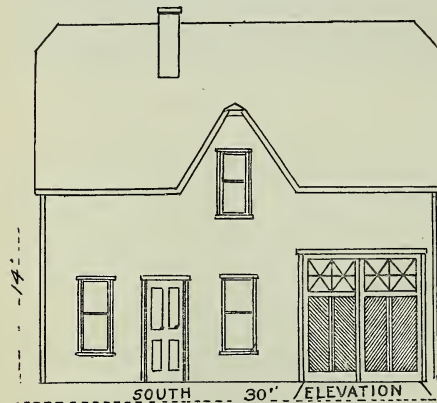
BY HENRY HOGRAVE

I am contemplating building a honey-house in the near future according to the plan shown herewith. This, when completed, I hope will save me much time and labor.

As you will observe, I have a garage in the same building; and as my yard is di-

rectly north of it with much heavy lifting when the full supers are brought in for extracting, or the bees are brought in for their winter's rest in the cellar of the house.

The extracting-room will be located on the second floor, part of which floor will



rectly north of it with rows of ten hives on either side of a center driveway thru the entire apiary, I can run the auto into the yard, load up, and take it to the honey-house.

The dummy (platform) located next to the garage is another feature of the plan

also be used for storing supers during the winter months. The honey-tanks, bottling, and honey-storage rooms, as well as the workroom, will be on the ground floor, being convenient for loading honey to be delivered, or receiving freight, etc.

Waukesha, Wis.

A DEMOUNTABLE EXTRACTING-HOUSE SUITABLE FOR A HOT CLIMATE

BY JOSEPH GRAY

In this locality we have to consider heat as the big factor, and plan accordingly. All our hives are set north and south, with the ramada (shelter or shed made of

branches) running east and west. The extracting-house is set at the east end because the evening sun is hottest at the west end of the ramada, which is shaded to protect

the hives. For the same reason our house is screened on the north, and closed solid on the south. The doors are solid instead of being screened, and open from the solid half of the building. This protects the opening from robbers. A screen panel above the doors lets out the heat. Here in Imperial Valley we are often at work with the thermometer in the shade well over 100 Fahr.

I favor a portable house, for the reason that, with the changing of crops, a whole district may be plowed up and become of no value from the apiarist's standpoint. One of the troubles of a really portable house is the roof. I have seen many materials used; but the cheapest, simplest, and best is a wagon-cover 12 x 14 feet of strong 12-oz. standard duck, made waterproof and durable by the use of beeswax dissolved cold in gasoline. The mixture must be very thin, and applied with a brush. Oil-dressed duck rots faster, and is stiff and hard, while beeswax is pliable and resistant to wet.

I do not want bees around my workshop; therefore it is away from the extracting-house. All I ask for is a good workbench and elbow room.

The extracting-house is made up of four panels—two ends and two sides. The side-panel framework is made up of 2 x 3-inch pieces except the top rail, which is a 2 x 4, with outside top edge beveled to fit the slope of the roof. The extra inch makes a small eave on which to fasten the canvas.

The north side panel is all wire screen;

the south side all wood, put on from the inside. The building is put together with 4-inch nails, a brace, a No. 3 or 4 bit being used to drill the hole, thus preventing splitting. If the lumber used is surfaced on four sides it will make a better job than rough lumber, as the former is of better quality, and almost free from knots. The end-panels framework is 2 x 3 inches, the ridge being 3 inches above the side plate.

The corners of the building are held together with 5-16-inch lag screws 3½ inches long. I use a No. 5 bit thru the first half and No. 4 bit for the screw part. The door is made of light wood, and opens on the south side. This throws the bees back against the screen. A wood door and screen window attract fewer bees to the exit, as the scent is emitted thru the screen. The question of two doors is a matter of choice; but they are a great convenience during the afternoon. The east door can be used, as the bees are on the west side of the building at that time. Bees are always attracted to the sunny side of the house.

To close the building for winter stores or workshop, use shutters of beaver boards on a wood framework.

The uncapping-can is a double washtub, the upper one with wire bottom. A pipe from the lower tub leads to the receiver from the extractor. A sack is laid in the top tub to catch the cappings, and in this manner the cappings are easily carried, when dry, to the solar extractor.

Gray Heber, Cal.

REARING BROOD IN MID-WINTER IN THE CELLAR

BY GEO. H. REA

Speaking about raising bees by artificial feeding in the cellar, Mr. Editor, here is something that will interest you.

Friday, January 28, temperature 70, sun shining brightly, and no wind, I could not resist the temptation to set a few colonies out of the cellar and play with them awhile. Fifteen colonies were put out. I have never seen bees in better wintering condition. Not a sign of a spot did they make in their splendid flight, either on the hives or the white shirt that I wore. In the afternoon they were so thick on the ground, gathering water, that one could scarcely walk about the yard without tramping on them.

These bees were cellared December 5. Winter stores were mostly buckwheat honey with a little goldenrod and aster honey. Six, that were a little light when cellared, were given a candy cake (about one pound) to be sure that they would go thru a long

winter's confinement. The candy is nearly all consumed.

Under the stimulus of this slow feeding, these six colonies now have brood in from one to three frames, young bees emerging by the hundreds, and the queens laying eggs as in spring. None of those without candy have brood or eggs. All were equally quiet in the cellar.

Perhaps the fellows who don't believe in this abnormal brood-rearing will have a chance to say, "I told you so," next spring; but I am not worrying about it. I have had this experience before. More about that candy and another feeding experiment later on.

So far the open winter and unusually warm winter weather have not affected our cellar temperature. It holds right along at 43. After twelve years of cellar wintering, and with a number of cellars part of the

time, I am convinced that it is the best method of wintering, in this part of Pennsylvania at least. About an average of 43 degrees, and as little change as possible from that, seems to be best.

Beekeepers should look well to the bees' winter stores. The unusual amount of flying weather will cause heavy consumption of honey. Many colonies, especially in the central and eastern counties, were light in the fall, anyway.

The regulation cake of bee candy may be given, or a feed of thick sugar syrup may be given on one of these warm days. Now, I suppose some one will hold up his hands and cry out against winter feeding because it will stimulate brood-rearing—a cold spell coming, consequent losses, etc. It won't hurt if the feed is all given at one time and made with just sufficient water to melt the sugar, and no more. Bees will fly frequently from now on, anyway, but it would make no difference if they didn't fly for a month.

It is interesting to know that, notwithstanding our small appropriation for apimary inspection, 933 apiaries were visited, 9384 colonies inspected, and 258 cases of foul brood found and cared for. Of these, 61 were American foul brood and 197 European foul brood.

THE SPREAD-OUT HIVE.

M'Cready's Spread-out Idea hive, page 30, interests me. Most enthusiastic beginners invent a hive about the first thing they do, and generally it is about the most impracticable kind of hive too (no reflections

on M'Cready's, however). This Spread-out Idea is good, only I think it needs some fixing. My twentieth anniversary in beekeeping will arrive next April, and I have a notion to invent a hive by way of a celebration. If I do, it will embrace the Long-idea and the Spread-out Idea. I may call it "The Ladies' Friend, or Anti-lift" hive.

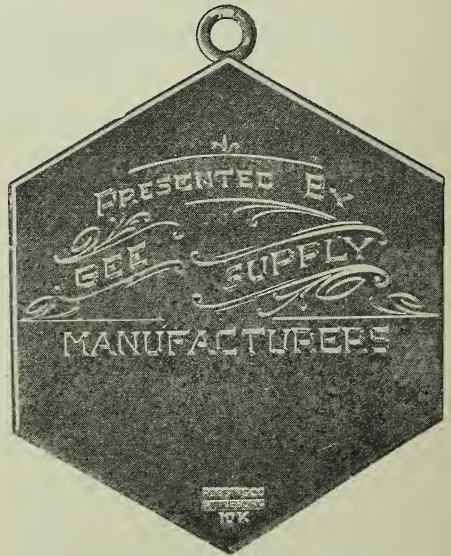
Reynoldsville, Pa.

[Some two or three winters ago Mr. J. E. Marchant and later Geo. H. Rea were conducting some experiments in making bees breed while in our cellars. Both proved that by feeding candy they could build up weak colonies in mid-winter into thoroly strong ones with young bees. A constant supply of fresh food has a tendency to start brood-rearing; and, as they proved at the time, this can be done provided one knows how.

The average beginner and perhaps the average beekeeper would do well to let the proposition alone, for breeding in the cellar is sometimes accompanied with dysentery; but when nice clear crystalline candy is used, and cellar conditions are right, there will be but little danger.

Mr. Rea, who is now back in Pennsylvania, it would seem has been trying the same experiment again, and he was likewise successful again, even in a different locality and in a different cellar.

What man has done, man can do, but it does not follow by any means that all men should try mid-winter feeding.—Ed.]



Gold medal offered by the Michigan Beekeepers' Association at the fiftieth annual convention at Grand Rapids, Dec. 15 and 16. Awarded to Mr. and Mrs. Floyd Markham, Ypsilanti.
See report by F. Eric Millen, page 125, Feb. 1.

Heads of Grain From Different Fields



The Backlot Buzzer

BY J. H. DONAHEY

Of all the uses for honey the one where you hand a couple of well-filled sections over the line fence to your skeptic neighbor is about the best recipe of all.

We shall have one of the best honey seasons next year, I think, I ever saw, judging by the white clover. In all my years of beekeeping I never saw a better prospect. Bees went into winter quarters in good shape. All have plenty of winter stores. Unless something unforeseen interferes, I think we shall have a record-breaker of a honey crop. J. W. Bittenbender.

Knoxville, Ia., Dec. 2, 1915.

Honey Souring in Combs

I should like to know if honey in the comb or otherwise ever goes bad. I do not mean sour—just bad, so it would be harmful to eat it. What are the causes? Would the presence of wax-worms do it if I had found nests in some of it? I am speaking of honey taken off hives last fall, and kept in a dry place in extracting-frames, the frames in the supers covered. Wm. C. Nelson.

Mount Vernon, N. Y., Jan. 18.

[Honey in the comb will sometimes sour, become watery at other times, so as to be too thin, and the excess of water in the honey may be the cause of the souring. Some honey is more inclined to turn to an

acid flavor than others. Of course, the honey may granulate in the combs; but this is no sign of inferiority. There is no other change that takes place in honey that we know of. The presence of wax-moths would have nothing to do with the matter. If honey is kept in a warm dry place it should ordinarily keep in nice condition; and the warmer and drier it is, the less tendency there is to granulation and turning sour.—Ed.]

A Honey-bread that is Genuine

In reply to your editorial, page 45, Jan. 15, I will say if the food commissioner were to get after me I would not have to plead guilty, as I could show him that my bread contains honey. Being entirely alone for the past dozen or more years I do my own cooking and baking, and invariably put honey in my bread, and nearly all other baking and cooking. I use at least a part honey; and if every family would do this we should need more bees to supply the demand.

Union Center, Wis.

Elias Fox.

Another Course in Apiculture

The Agricultural College at Cornell is offering this coming term of 1916 a course in practical beekeeping. The course consists of one lecture and two laboratory periods of 2½ hours each, weekly. The students are to be given practice in nailing hives, making wax, making hard and soft candies, artificial cell-cups, etc. Later on, when weather permits, each one will have opportunity to handle the bees, and will be required to mount a collection of the nectar-yielding plants of this region. I think you will be glad with me that the great State of New York is at last waking up to the importance of her beekeeping industry.

Ithaca, N. Y.

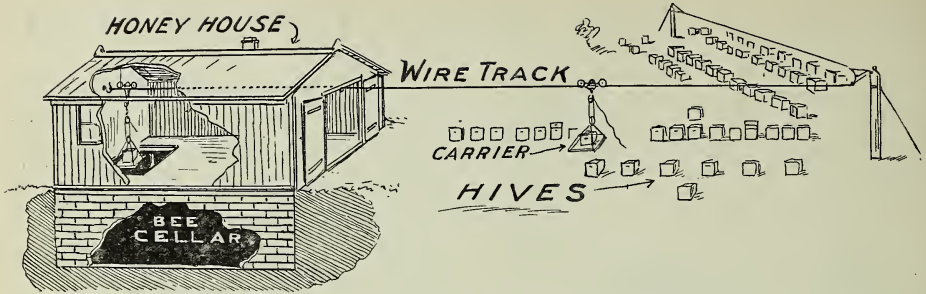
Wendell T. Card.

Is It Necessary to Mark the Net Weight on a Pitcher of Honey?

If one of my neighbors brings a pitcher for some extracted honey, is it necessary for me to tag the pitcher so much net? Can a trader have a sixty-pound can of honey in his store, and draw out of it for a customer? Can I sell a section of honey to my neighbor without stamping it? J. B. Mason.

Mechanic Falls, Me., Jan. 27.

[Unless you do an interstate business it will not be necessary for you to mark anything. If Maine has a net-weight law of its own it would be necessary for you to mark the exact contents by weight or measure of any regular package of any commodity that you might be selling. As a pitcher is not a regular package it would not be necessary, in our opinion, for you to mark this in any manner whatsoever. In fact, it would be impractical. The law contemplates only



regular packages that are supplied to the trade or to individuals. A glass tumbler or a jar, tin can, or anything of that sort, would have to be marked with the net weight, either in quarts or gallons, or pounds or ounces. Usually a 60-lb. can is not considered a package; but to be on the safe side we would advise marking even a 60-lb. can when sent out.—Ed.]

Bees Have Trolley Ride

The sketch represents the plan of my honey-house, bee-cellar, and hive-carrier. The building is 16 x 24, 8 feet high, and the cellar is 7 feet deep. The carrier is of the barn-litter-carrier type, except that it is equipped with a small block and tackle for the purpose of lowering it to the ground while being loaded with supers for the extracting room, or with colonies for the cellar which are lowered thru a trapdoor in the floor of the honey-house. The heavy wire track will carry over 300 pounds. The track can be equipped with switches to accommodate many rows of hives. By using cement block for building, the above contrivance will cost about \$200, not including labor.

Fairfax, Ia.

C. F. Wieneke.

Honey-dew from Oak Galls

In the autumn of 1884 I was invited to inspect the apiary on the famous Rancho Chico, the estate of Gen. John Bidwell. I found over one hundred colonies in fine condition, and some had built comb and stored honey outside of the hive. Looking for the source of the extraordinary yield of honey I found that it came from galls on the white oak. Many trees were covered with the exudation, as if it had been sprayed on by the hundreds of gallons. Some trees were more abundantly supplied with the galls than others; but the infestation was practically universal.

These galls were about the size of a common pea, and so numerous on the terminal twigs that frequently there would be several in an inch length of twig. So profuse was the exudation that, solidifying as it dripped, it hung like stalactites.

This honey-flow is not like the flow caused by aphides, the producing insect being entirely different. It was found that the exudation from the gall took place while the

insect within was in the form of a grub or worm. Later the grub transformed into an imago, and finally emerged a delicate-winged insect that seemed to be a miniature honeybee. Many of the winged insects appeared in December of the same year. While the same galls and attendant exudation have been seen by me in later years in a minor degree, there has never been anything so profuse since.

Placerville, Cal.

H. G. Hulburd.

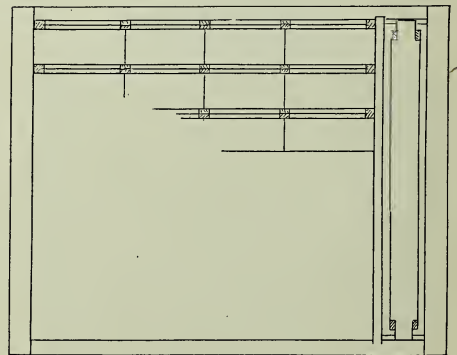
Sounds Cold from Oregon

I always thought that Oregon had a fine climate, but I think it is about as changeable as that of any other state. At present we have 10 inches of snow, and it is still snowing. Last night my bee-shed got so heavy with snow that it broke down, falling on the hives. It didn't do much damage, but I shall have a little fun fixing it up again.

My bees did very well last season, and are in very good shape at present; but I don't know what this cold snap will do to them, as I was not expecting such cold weather here in the valley. It is 10 degrees above zero today, Jan. 13.

Aurora, Ore.

C. E. Sprague.



Here is a super which I have found very serviceable, allowing the use of 4 x 5 sections without waste of space, and providing for an extracting-frame. Any 16 x 20 deep super can be used.

Ann Arbor, Mich.

E. G. Mann.

A. I. Root

OUR HOMES

Editor

Eye hath not seen, nor ear heard, neither have entered into the heart of man, the things which God hath prepared for them that love him.—I. COR. 2:9.

I have been reading the *Sunday School Times* for so many years I could hardly attempt to tell how long, and it was one of my "happy surprises" when I found glimpses on its pages that its editors had been reading these Home papers of mine at least occasionally. Well, some two or three years ago I was again "happily surprised" to receive a personal letter from Chas. Gallaudet Trumbull, telling me of a wonderful new spiritual experience he had just received. I at once wrote him asking permission to print the letter in these Home papers. I have never heard from him personally since, and, of course, I could not give the letter to you all. I have, however, been pleased to get glimpses of this experience in almost every issue of the *Times* since. The tract we have been sending out, "The Defeat of Injustice,"* is one of the fruits of that experience. A few weeks ago at our Bradentown prayer meeting I read the following clipping from the *Sunday School Times*:

"Daddy, did you notice tonight that I bowed my head and put my hands up to my eyes?"

The little girl of five years had cuddled into her father's arms in a corner of the library while the evening shadows were gathering, for one of the precious little times of confidences.

"I was naughty today, Daddy."

"Were you, Annie?"

"Yes, and I was asking Jesus to forgive me. Whenever I am naughty now I bow my head and just tell Jesus, and ask him to forgive me."

"And he always does it, doesn't he, Annie?"

"Yes," the little girl answered. And then in a sudden burst of confidence she poured out the problem of her child-heart. "Daddy, it's awful hard to be good, isn't it?"

That heart-cry of the little girl finds its response in every Christian's heart. No man would wish to deny the truth that is wrapped up in that confession. Yet there are two serious falsehoods implied in our "axiom," "It's awful hard to be good."

It is not only hard to be good, but it is utterly impossible for fallen man to be good. A Christian has come to an encouraging point in his experience when he is able to realize this. Not only is it true that "none is good, save one, even God," but it is also true that no one else can be good. This is the message of the Incarnation. God in Christ came in the flesh and "was good"—a thing that was impossible for fallen man.

Then I followed it with part of a letter from our son Huber, as below:

Dear Father:—At the Laymen's Missionary Conference in Cleveland last week I had the opportunity to hear Charles Gallaudet Trumbull, editor of the *Sunday School Times*. He made a splendid address, and I wish you could have heard him. The whole theme of his address was this: During a time

of temptation make no effort to fight against it yourself, but let Jesus Christ carry on the fight. He illustrated his point by telling a story. It seems that a little girl, after joining the church, was asked by an older person whether she felt any different since becoming a Christian. She replied that she most certainly did. When her friend asked her in what way she felt different she said, "Now when Satan knocks at the door of my heart I just tell Jesus to go to the door, and I pay no attention to it myself. When Satan finds Jesus at the door he merely says that he guesses he has made a mistake. and has come to the wrong house."

After the meeting a lady who had just attended some large religious gathering handed me a tract, saying she felt sure I would be interested in it. Now, to tell the truth, so many "tracts" are piled up on my desk unread I feared this would only add to their number; but when I saw it was from my good friend Trumbull I changed my mind. I have now read it thru three times, and "then some." The title of the tract is, "The Life that Wins." There are 20 pages in the tract, and I give you below the contents of the first two.

AN ADDRESS (REVISED) BY CHARLES GALLAUDET TRUMBULL BEFORE THE NATIONAL CONVENTION OF THE PRESBYTERIAN BROTHERHOOD OF AMERICA, 1911.

There is only one life that wins; and that is the life of Jesus Christ. *Every man may have that life; every man may live that life.*

I do not mean that every man may be Christlike. I mean something very much better than that. I do not mean that a man may always have Christ's help. I mean something better than that. I do not mean that a man may have power from Christ. I mean something very much better than power. And I do not mean that a man shall be saved from his sins and kept from sinning. I mean something better than even that victory.

To explain what I do mean, I must simply tell you a very personal and recent experience of my own. I think I am correct when I say that I have known more than most men know about failure, about betrayals and dishonorings of Christ, about disobedience to heavenly visions, about conscious fallings short of that which I saw other men attaining, and which I knew Christ was expecting of me. Not a great while ago I should have had to stop just there, and only say I hoped that some day I would be led out of all that into something better.

Please note above what he says about "power." In these days of automobiles, when not only boys but *girls* too learn to run them; when you feel you have at the tips of your fingers *power* to go just as fast as any one can want to go, and, too, by practice, run almost to a hair's breadth of where you wish to go, who has not felt the thrill of being entrusted with such power? Well, Trumbull speaks from experience of something "much better than power." I read the above part of the tract to our large Bible class in our Sunday-school here, and they wanted me to go on with it, just as

* See page 557, July 1, 1915.

many of you, dear friends, would have me do; but you really need the whole of the tract to get the writer's secret. The little girl mentioned in Huber's letter had touched the point. I will give just one more extract from p. 13.

What I mean is this: I had always known that Christ was my Savior: but I had looked upon him as an external Savior, one who did a saving work for me from the outside, as it were; one who was ready to come close alongside and stay by me, helping me in all that I needed, giving me power and strength and salvation. But now I knew something better than that. At last I realized that Jesus Christ was actually and literally within me; and even more than that: that he had constituted himself my very being (save only my resistance to him), my body, mind, soul, and spirit. Was not this better than having him as a helper, or even than having him as an external Savior—to have him, Jesus Christ, God the Son, as my own very life? It meant that I need never ask him to help me again, as tho he were one and I another; but, rather, simply to do his work, his will, in me, and with me, and thru me. My body was his, my mind his, my will his, my spirit his; and not merely his, but literally a part of him; all he asked me to say was, "I have been crucified with Christ, and it is no longer I that live, but Christ liveth in me." Jesus Christ had constituted himself my life.

Now, here is something that took hold of me more than almost anything else on the whole 20 pages. Read below:

Do not think that I am suggesting any mistaken, unbalanced theory of perfection or sinlessness in what I have been saying. The life that is Christ reveals to a man a score of sins and failures in himself where he saw only one before. He is still left the free will to resist Christ; and my life, since the new experience of which I speak, has recorded shamefully many failures and sins of such resistance. But I have learned that the restoration after failure can be supernaturally blessed and complete.

As I write on this 3d day of Feb., 1916, I feel that I have made a little start on "The life that wins," and the first revelation that comes to me is, as expressed above, where I saw only *one* sin before, there are now "scores." Sheldon, in one of his books, suggests, "What would Jesus do" were *he* in your place? Dear friends, you have given me scores of kind words. They are coming all the time. As I think of it, the chorus of the old hymn that the good woman wrote comes to mind.

Lord, lift me up and let me stand,
By faith, on heaven's tableland,
A higher plane than I have found;
Lord, plant my feet on higher ground.

NON-RESISTANCE AND LAW ENFORCEMENT.

The two letters below explain themselves.

Did A. I. Root ever consider that the plan of salvation brought to us by Jesus Christ teaches us non-resistance? He suffered all patiently to redeem mankind from their sins, and wishes his followers to follow in his footsteps. L. A. R.

I am a reader of GLEANINGS, and am pleased with the Home department, and have frequently thanked God for the spirit of boldness he has given

you to express your convictions on religious and other important subjects. Of course, I do not approve of all your ideas; but in such cases I turn your idea over to the Lord and tell him to let the light on you and also ask him to search me; and, if I am in the dark, let the light on me. I often say, "Lord, do not let me be deceived on any line." The psalmist prayed that way. He also prayed, "Keep back thy servant from presumptuous sins; let them not have dominion over me," etc.

In looking over the Home papers of June 15. I notice Bro. Poister's admonition. Thank God for such men. Now, I think that carries the spirit of the Master. Brother Root, do not pass that admonition lightly by. Paul says to the Romans, "If any man have not the spirit of Christ he is none of his." Now, if you find in any of Christ's teaching the spirit of fight or defense, use it. But if you cannot find it, beware of your own ideas.

I was surprised to notice that you regard the scripture quotations the brother referred to are merely for neighborhood differences. Are we to understand you that the Son of God left the Father's throne and shed his blood merely for neighborhood differences? Was it not that he came to save that which was lost? Brother Root, let us take the Lord Jesus for our example in suffering in any shape or form, and I then am sure we shall not miss the blessing. In conclusion, please take this in the spirit it was given—not in malice or any ill feeling, but in love; and if you want to defend yourself give us a "thus saith the Lord."

Ahilene, Kan., June 20.

N. G. HERSHEY.

My good friends, I do not know but we are all getting into "deep water" when we undertake to discuss this question. Our Lord and Master once drove the money-changers out of the temple with a whip; but it has been claimed that this whip was only harmless cords. Again he says, "I came not to bring peace on earth, but a sword;" and I suppose sermons have been preached and books written on this very passage. My opinion is that it refers particularly to the enforcement of law. Again, Jesus came to earth on a special mission; and that mission was summed up, I believe, by the words "Peace on earth, good will to men." And, once more, it is my impression that this refers to law enforcement. How about making counterfeit money and passing it? Counterfeiters almost always fight with guns and pistols when their gang is broken into. And, once more, in regard to the liquor-traffic. Shall we apply non-resistance to this and let the business go on? God forbid. Once more, it is quite a different matter whether the sin affects the individual alone or humanity in general. When a blow comes to me individually on the right cheek, I believe it is my duty to turn the other cheek also. But in case of a blow against all humanity, like counterfeit money, or against suffering men and women and children in consequence of the liquor-traffic, then I believe our Lord and Savior would have me fight to the best of my ability for the suffering ones.

NON-RESISTANCE; AND DID JESUS MEAN TO SAY THAT WE SHOULD NOT PROTECT OURSELVES AS A PEOPLE AND AS A NATION?

A. J. Root:—Properly speaking, Jesus did not say, "Resist not evil." The Greek word which is translated "resist" in Matt. 5:39 is translated elsewhere in our English Bible either "resist" or "withstand." It is used in fourteen places in the Bible—Matt. 5:39; Luke 21:15; Acts 6:10, 13:8; Rom. 9:19, 13:2 twice; Gal. 2:11; Eph. 6:13; 2 Tim. 3:8 twice; 4:15; James 4:7; 1 Peter 5:9. An inspection of these places will show that the word cannot be supposed to carry in itself any particular reference to the use of physical force. A fuller study of this Greek word (which is just as open-faced a compound as the English "overthrow" or "outrun") shows that it does not express the idea of any activity at all, but simply of taking an attitude or staying in an attitude, while "resist" necessarily expresses the idea of an activity directed against the antagonistic person or thing. In this respect "oppose" would be a more exact translation, though "oppose" would not be very perfect either.

Since the word does not express anything so particular as the use of physical force, we have to judge of its force in this passage from the connection. The connection is along such lines as these: Do not make a point of seeing to it that every misdeed is paid off, but bear petty outrages without setting yourself in opposition. It is very important to note that all Jesus' instances are of petty outrages. Now, a man chooses his instances so as to be appropriate to his meaning. It would be perfectly ridiculous if a man meaning to say that we should not resist an attempt at murder or the robbery of a lifetime's savings were to express this by saying, "Do not resist a slap on the cheek or an extortion of half an hour's work." Now, even among those who are (as Anacharsis Clootz said of himself) "personal enemies of Jesus Christ," nobody denies that Jesus knew how to express himself tellingly. If Jesus knew

how to express himself as intelligibly as ordinary men, then by those words about a blow on the cheek, etc., he did not mean the most serious outrages.

My understanding of the meaning is like this. A Christian is concerned in this world with things he is to recognize as much more important than standing up for his rights; properly, standing up for his rights is no object at all to him; and if he is to stand up for his rights whenever they are violated he will have no time left for his Christian duties; besides, the fact that standing up for his rights will sometimes work against the objects that he as a Christian is pursuing. So he should not make it a rule to stand up for his rights. But if the things that are being done to him are such as to interfere with his doing the things that it is his Christian business to do, then it is a part of his Christian business to put out of the way whoever and whatever interferes, provided that it does not cost more in time, nerve-force, and arousing of hostility, than it is worth.

At present a mighty attempt is being made in the world to give war the right of way; to insist that, when war is started, interests of peace must give way to interests of war. If this attempt should be successful, it would set back the cause of peace at least a century. Anything that we can honestly and lawfully do to defeat this attempt, whether by selling arms or otherwise, is well done. A great deal of the talk about the exportation of arms leaves out of account the fact that the actual exportation of arms is simply helping honest and peace-loving people to defeat violent crime. It is as if I saw John Doe jump up and begin shooting at Richard Roe because Doe had heard Crazy Joe say that Roe meant to steal Doc's chickens, and I should hand Roe a gun, since the circumstances were such that Roe must fight or go under, and the people should tell me I was doing—well, very unchristianly by helping to arm a fight.

STEVEN T. BYINGTON.

Ballard Vale, Mass., June 25.

POULTRY DEPARTMENT

HOW TO MAKE HENS STOP LAYING?

"Whew!" says some one. "Why should anybody want to make hens stop laying?" Well, it's something like the boy who wrote a composition on pins. He said pins had been the means of saving many lives. When the teacher asked him to explain in what way pins saved lives, he replied, "By not swallowing of 'em." Again, don't you know that, when our great doctors want to get control of an epidemic, they first proceed to cultivate the bacteria, and when they can get it to growing in their "pure cultures" (I think they call it) they can then formulate an antidote. Now to business.

When I first got here, as usual our 60 hens began to increase in laying; but after they got up to about 18 eggs a day, to my surprise (and disgust) they dwindled back to only five or six a day. I told neighbor Abbott about it, and when he found I was giving them a mash of shorts and boiled

sweet potatoes he said at once that sweet potatoes, either raw or cooked, would "stop hens laying." He added further, "You can give them to your growing stock, sitting hens, or hens with chickens, or to a pen of roosters, but never to laying hens."

I stopped the sweet potatoes, and soon I had toward two dozen eggs a day. Let me explain further.

A year ago we set out sweet potatoes in December and January, and I didn't get back here to dig them for almost a year. They were not only very large, but very poor. We used the best for the table, and boiled the rest for mash, as explained: in fact, some of them were partly decayed; but as the fowls ate them greedily I thought it would do no harm. Now, is it only *bad* sweet potatoes that stops laying? Mr. Abbott thinks not. A neighbor's hens got into the sweet potatoes, dug them up, and ate them raw, and very soon he did not get an

egg. Can our readers tell us more about this? I feel pretty sure that too much of a certain diet of many things will cut down the egg yield, and it is also true that a change in diet will often *add* to the egg yield. Plenty of sprouted oats, or even green oats a foot high, will often do it.

SPURS ON MALE FOWLS; HOW TO REMOVE.

I will tell you my way of taking spurs off, and you can do it in a few minutes. Put on the fire, in a pan of water, two potatoes about the size of a nice apple. Boil till nearly cooked, and then push each potato on a spur and keep it there for a minute or two, when the spur will come clean off.

JAMES SMITH.

Kirkmahoe, Dumfries, Scotland, Nov. 9.

HEALTH NOTES

COTTAGE CHEESE OR "DUTCH CHEESE," AND HOW TO MAKE IT.

Mr. A. I. Root:—In your Home department, you occasionally make mention of "cottage" cheese as a very wholesome article of diet. I wish you would, in an early number of this magazine, describe the process of making this kind of cheese. From what you have said about it from time to time, the writer's mouth waters for it, and he is anxious to try his hand at making it.

Halls, Tenn., Jan. 15.

J. C. SAWYER.

My good friend, I supposed every housewife in the land knew how to make cottage cheese, or what is called in many places "Dutch cheese." Mrs. Root says, set sour milk on the stove until it is about as hot as you can bear your finger in. Then pour it into a cloth bag, strain out the whey, and season to taste.

CURING BEESTINGS, POISON IVY, ETC.

More than forty years ago, when I first made the acquaintance of the honeybee, beestings were very painful, and swelled on me, and I listened with very much interest to everybody who had a remedy for beestings. The juice of different plants, a piece of onion, potato, a little bit of mud, etc., were carefully tested; but I soon decided that it was only a notion or the effect of the imagination. Then somebody advertised something in a bottle. In fact, a beesting cure had been advertised in the bee-journals more or less; and as good a man as Dr. A. B. Mason, of Toledo, declared that the essence of peppermint or some other essence, I cannot remember what, was a *sure* cure. I said first, last, and always, "Pull out the sting. Do not rub the place, nor meddle with it so as to diffuse the poison, but get busy, and get your mind off from it, and the pain and swelling will soon go away;" and my impression is that the beekeepers of our land gradually came to the same conclusion I did. Get out the sting, and get it out with a knife or a pair of tweezers so as not to squeeze the contents of the poison-bag into the wound.

Well, of late our agricultural papers have been giving cures for ivy poison, and I have all the time felt confident that a careful experiment would prove about the

same as with the beesting. The matter was brought to mind by a clipping, but I cannot tell just now what periodical it came from. The closing words, which I have put in *italics*, are what caused me to give it a place here:

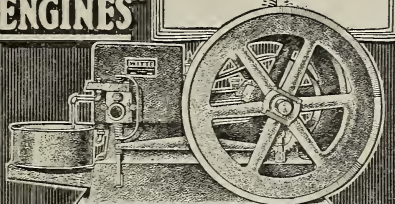
CURES FOR IVY POISONING.

The *American Botanist* publishes a letter from a Brookline, Mass., correspondent stating that fishermen along parts of the Massachusetts coast find a prompt cure for the effects of poison ivy and poison sumac in the fireweed (*Erechtites hieracifolia*). The poisoned parts are rubbed with the leaves of this plant, which must be fresh each time, bruised and crushed so that the sap moistens the skin freely. An editorial note mentions the fact that a large number of other plants have been recommended for ivy poisoning—notably touch-me-not and burdock—but that "*it seems doubtful whether any of these herbs can do more than take the attention of the patient from his troubles and cure him by mental suggestion.*"

Let me call attention to one point in all these remedies. If it were true that the juice of fireweed is an antidote for poison ivy, how did anybody happen to discover it? Edison has been called the greatest inventor of the age; and here comes the point—how does he accomplish his inventions or make his great discoveries? Why, he did it by making thousands of tests, on storage batteries, for instance. I think I have seen it stated how many combinations he made with chemicals before he brought out his present storage battery. Now if catnip, tansy, and a great lot of weeds have power to cure diseases, the only way to settle it would be to get a hospital full of patients suffering from one particular ailment. Then bring on your herbs—a hundred, or, better, a thousand. Squeeze out the juice or make some tea and give to the patients, and notice the effect. If catnip tea gives relief to thirty or forty, and the other patients are not helped, then we may be pretty safe in saying that catnip possesses medical qualities for certain diseases. Has such an experiment ever been made? Not that I know of. Of course our grandmothers gave catnip tea to the children that were ailing, and they got better, forgetting that nine times out of ten they get better without catnip tea, and so on.

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REMEMBER Nothing is so good but what it can be better. Thousands who have bought from other firms for ten and twenty years tell us we give better seeds at lower prices. Investigate. Get our book. Try our seeds and nursery stock. You will say the same thing. All I ask you to do is just get our book, look it over, try our seeds—be your own judge.

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Every reader should have a copy. Over 27 years growing the finest Strawberries, raspberries, Blackberries, Currants, Gooseberries, Grapevines, etc. All kinds of Fruit Trees, Ornamental Shrubs, Privets, Barberry, Asparagus, Rhubarb, Horseradish, and Farm Seed.

Our Nursery and Farms comprise over 1200 acres in the fertile Miami Valley. Our 40-page catalog is yours for the asking. It is full of just what you want to know about fruit-growing.

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Tells about planting, pruning, spraying and selling fruit and garden truck.

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The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from \$50 to \$125 per acre. Easy to start, grows everywhere, on all soils. Write today for our Big 100-page free catalog and circular about unhulled and scarified hulled sweet clover. We can save you money on best tested, guaranteed seed. Sample Free.

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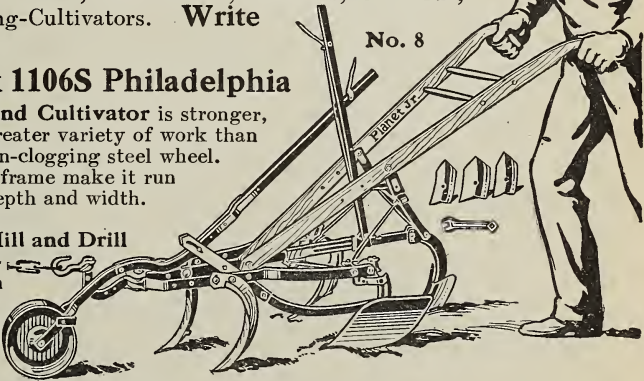
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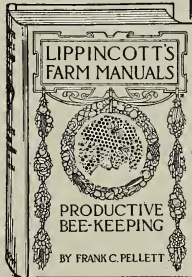
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A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder; and all that is required is cold water to make a paint weather proof, fire proof, sanitary, and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone, or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 58 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.



Free for Testing

A pair of mated **EVERBEARING STRAWBERRY PLANTS** FREE if you will report as to your success with them. Will bear loads of big, red, berries from June to November. We have counted 450 berries, blossoms and buds on a single plant. A postal will bring the plants, also enough seed of the new **CEREAL FETTERIA** to plant a rod square of ground. Also a pkt. of perennial **ORIENTAL POPPY** seed. Send 10 cts for mailing expense or not, as you please. Write today and get acquainted with **THE GARDNER NURSERY COMPANY** Box 749, Osage, Iowa.

"Next Door to Everything"

Reads the advertisement of a great railway terminal. "Next door to everything in Beedom" fittingly describes our location. In the bee-supply business distance is measured, not in miles but in hours and minutes; and the house that gives first service is nearest the beekeeper.

Tho but a short distance from the geographical center of Ohio we are yet so near to West Virginia and Pennsylvania, and so closely connected by transportation lines, that we are truly "next door."

Some idea of our importance as a distributing center may be gained from the fact that more than fifty mails arrive and as many depart daily, and almost a hundred freight and express trains enter and leave the city every twenty-four hours.

Then our location in the city is most accessible. Our office and warerooms are just off the main business thoroughfare, in the heart of the wholesale district, and only a stone's throw from depots, post-office, and the large retail stores. Beekeepers and their friends are earnestly invited to make our store their headquarters when in the city.

The best goods and service justify us in promising our customers the fullest measure of satisfaction.

March cash orders are subject to a special discount of 1 per cent off catalog prices. Clover looks most promising for the coming season, and it is the part of wise foresight to prepare carefully the bees for winter, and anticipate all possible requirements.

E. W. Peirce,

22 So. Third St. Zanesville, Ohio

The Eyes, Ears, and Mouth are Near Together

To see birds, hear their music, and taste honey are a happy trio. . . .

There is a new and enlarged
Bird Department
in the
Guide to Nature

Send twenty-five cents for a four-months' trial subscription

Address: ARCADIA, Sound Beach, Conn.

This Washer Must Pay for Itself

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse. But I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said, "All right, but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse wasn't "all right," and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, altho I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'll never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way.

So, thought I, it is only fair enough to let people try my Washing Machines for a month before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tubful of very dirty clothes in Six Minutes. I know no other machine ever invented can do that without wearing out the clothes.

Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it doesn't wear the clothes, fray the edges, nor break buttons the way all other machines do.

It just drives soapy water clear thru the fibers of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month I'll take it back, and pay the freight too. Surely that is fair enough, isn't it? Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 cents to 75 cents a week over that in wash-woman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line today, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me this way—H. L. Barker, 1624 Court St., Binghamton, N. Y. If you live in Canada, address 1900 Washer Co., 357 Yonge St., Toronto, Ontario.



Notice to Northern Beekeepers!

We are making a specialty of the pound-package trade, and will ship from our yards at Fitzpatrick and other points in Alabama packages and queens during April and May at the following prices:

Pound package with queen, \$2.00; without queen, \$1.25. Untested queens, single, \$1.00; six, \$4.50; dozen, \$8.50; in lots of 50 or more, 60 cts. each. Select tested, \$2.00. Breeders, \$3.50. A special price quoted on packages of 50 or more, and 5 per cent discount on all orders by March 15.

We have improved on the pound package, making it larger and lighter, also giving it more ventilation. The vast experience of our Mr. A. B. Marchant with The A. I. Root Company enables us to know what the trade wants and needs, and we are well equipped to take care of any and all orders, regardless of size.

Our aim is to carry a surplus so as to be enabled to fill orders by return mail, and on the day they fall due. Our stock of three-band Italians has stood the test for 20 years. There is no better. We have sold The A. I. Root Company two car-loads of bees and several hundred queens, and will sell them again this season. We guarantee safe arrival free from disease, pure mating, no inbreeding, and your money refunded if not satisfied.

References: The American Exchange Bank of Apalachicola, Fla.

Insure yourself against loss by placing your order with

The Marchant Bros., . . . Sumatra, Florida

After March 15 our address will be Fitzpatrick, Ala.

The Rarest and Best Offer Yet

A daughter of one of Dr. Miller's best honey-getting queens and the *Beekeepers' Review* one year for only \$2.00. Every one will want a daughter of those famous World Champion Honey-producers. Listen to the record: A yard of 72 colonies produced in one season 17,684 finished sections of comb honey, or an average of 245 sections per colony. This is without a doubt the world's record crop from a yard of that size. Start breeding up a honey strain of bees by using one of those famous daughters this season. This is the first time stock from this noted yard has been on sale. Our breeder, one of the very best in the Gulf States, will breed from one of those best queens; and as his original stock is of the best three-banded stock, wonderful results are to be expected. Let us book your order at this time for one of those fine queens, for we have for sale only something like 500 for June delivery. The queen is well worth all we are asking, \$2.00 and the *Review* for a year.

1000 Pound Packages of Comblless Bees for Sale with Queen

Did you ever ask a breeder to quote you a price upon a thousand pound packages of comblless bees? If you did, you will have noticed that he took his pencil from his pocket, and began to figure what such a sale would save him in advertising, postage, office help, etc., and the results would be that he would make you a very close price. Now we have that very close price on one-pound packages of bees; and, as is usual with us to charge no profit on supplies furnished subscribers of the *Review*, none will be charged upon those; but our subscribers will get all the advantage of this good buy. Notice that this close price is not for a late fall delivery, but April and May delivery, later deliveries at a less price that will be quoted later, or by mail for the asking. Upon this deal we have two big points: First, the price; second, an old experienced breeder who has spent his life breeding bees and queens for the market. We mention this so you will not get it into your heads that this is a "cheap john" lot of goods, but that they are as good as money can buy, no matter what price you pay. The price is \$16.00 for ten pound packages of those comblless bees, each containing a young untested three-banded Italian queen of this season's rearing. Additional pound packages, without queen, one dollar each.

For larger lots ask for special price, stating how many you can use and when the delivery is to be made. They are shipped from Alabama, in light well-ventilated cages, by express. Just a word to the wise: Book your orders early! Address?

THE BEEKEEPERS' REVIEW, NORTHSTAR, MICHIGAN



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Nearly 100,000 Galloway engines in daily use. Long stroke, large bore, heavy weight. Built for hard, continuous engine-runners' satisfaction. All sizes, prices, styles. Modern design, few parts, best material, skilled labor. Positively not over-rated. Sold direct. Engine book free. Investigate and compare before you buy. WM. GALLOWAY CO., Box 765, WATERLOO, IOWA

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Quality Quickly

There's the reason why we maintain two western branches and warehouses. The convenience of lower freight and prompter shipments, coupled with the excellence of our bee supplies, have been realized by western honey-producers.

It is unnecessary to talk here about the type of supplies carried in stock at these two distributing points.

The Proof of Quality

Our exhibit at the Panama-California Exposition was awarded a grand prize and a gold medal.

This is California's
Decision

The A. I. Root Co., Los Angeles, Cal.

Geo. L. Emerson, Manager, 948 East Second St.

Where the Weed foundation-machines are making perfect non-sag foundation. Send us your wax to be made into foundation. We buy wax too.

Root Redwood Hives.—A sample hive body with cover and bottom KD, \$1.00. Quantity prices on application. We cut hive parts to order.

New machinery for manufacturing hives and frames has been added. Extractors are now shipped "knocked-down" from the factory at Medina.

The A. I. Root Co., San Francisco, Cal.

245 Mission Street

We have moved. Office and warehouse in the same building.
Write for catalog and send us your list of wants.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

FOR SALE.—Car of comb honey in Airline cases. F. A. ROBINSON, Nampa, Idaho.

Clover honey of the finest quality in new 60-lb. cans at 9 cts. per lb. J. P. MOORE, Morgan, Ky.

Fancy extracted clover honey at 9 cts. per lb. Sample 10 cts. JOS. HANKE, Port Washington, Wis.

Fine extracted clover honey in new 60-lb. cans at 9 cts. per lb. A. S. TEDMAN, Weston, Mich.

Clover-goldenrod-heartsease blend. Light amber, best quality, prices right. Sample, 10 cts. E. S. MILLER, Valparaiso, Ind.

Amber honey, 7¼ cts. per lb.; sage honey, 8½; clover honey, 10 cts. per lb. in 60-lb. cans, I. J. STRINGHAM, 105 Park Place, New York.

FOR SALE.—White-clover honey in 60-lb. cans, packed two to the case, now granulated, at 9 cts. per lb. J. E. HARRIS, Morristown, Tenn.

Best flavor alfalfa-sweet-clover honey; 2 60-lb. cans, \$9.50, f. o. b. here; delivered west of Chicago at 9 cts. a pound. WESLEY FOSTER, Boulder, Col.

Finest clover honey, 8½ cts.; buckwheat, 8 cts., in cases of two 60-lb. cans; 6-lb. can postpaid in second zone, \$1.00. Satisfaction guaranteed. EARL RULISON, Rt. 1, Amsterdam, N. Y.

FOR SALE.—Finest quality of white-clover-basswood blend extracted honey in new 60-lb. cans. State how much you can use, and I will quote you price. L. S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Honey-dew honey for baking or bee-food, 5 cts. by case; ten cases, 4½ cts.; 25 cases, 4 cts. per pound; two 60-pound cans to case; also some fall comb honey, \$2.50 per case of 24 sections. H. G. QUIRIN, Bellevue, Ohio.

Fine new-crop basswood and clover honey at 9 cts. in new 60-lb. cans with 3-in. screws. Also in gallons and smaller, for family and store trade. State quantity wanted. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Water-white alfalfa, white clover, amber alfalfa, and amber fall honey in 60-lb. cans or smaller packages. Amber fall honey is of our own extracting, and can also be furnished in barrels. Write for sample of kind desired, and state quantity you can use. DADANT & SONS, Hamilton, Ill.

RASPBERRY HONEY.—Thoroughly ripened by the bees, very thick, and of fine flavor; in new 60-lb. tin cans, \$6.00 per can. We have a little slightly mixed with buckwheat at \$5.00 per can. Sample of either kind by mail for 10 cts., which may be applied on order for honey. Write for prices on large lots. ELMER HUTCHINSON, Rt. 2, Lake City, Mich.

HONEY AND WAX WANTED

Beeswax bought and sold. STROHMEYER & ARPE Co., 139 Franklin St., New York City.

WANTED.—Your own beeswax worked into "Weed Process" foundation at reasonable prices. SUPERIOR HONEY Co., Ogden, Utah. "Everything in bee supplies."

FOR SALE

Honey Labels, very choice. Lowest prices. Catalog free. LIBERTY PUB. Co., Sta. D, box 4E, Cleveland, O.

HONEY LABELS.—All styles. Catalog with prices free. EASTERN LABEL Co., Clintonville, Ct.

Best offer takes 50 extracting-combs. WILLIAM N. MILLER, Dodgeville, Wis.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. HEALY, Mayaguez, Porto Rico.

FOR SALE.—Circular-saw mandrels, and emery-wheel stands. CHARLES A. HENRY, Eden, N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. WHITE MFG. Co., Greenville, Tex.

Good second-hand 60-lb. cans, 25 cts. per case of two cans, f. o. b. Cincinnati. Terms cash. C. H. W. WEBER & Co., Cincinnati, Ohio.

FOR SALE.—Gramm alfalfa and yellow biennial sweet clover, dwarf, grows in all soils and climates. JOHN FREDRICH, Sturgis, S. D.

FOR SALE.—500 cases with empty 5-gallon cans, good as new, at 25 cts. each. GEORGE RAUCH, West New York, N. J.

FOR SALE.—Extractor, practically new, No. 27B, four-frame Root automatic, with 12-inch pockets; late style. PORTER C. WARD, Allensville, Ky.

FOR SALE.—Cedar or pine dovetailed hives, also full line of supplies, including Dadant's foundation. Write for catalog. A. E. BURDICK, Sunnyside, Wash.

FOR SALE.—Hatch wax-press and five Excelsior covers, \$5; also pair marine glasses, \$2.50. ROLAND HEACOCK, New Milford, Ct.

Hoffman self-spacing frames, in flat, 100, \$3.00; 500, \$13.75; 1000, \$27.00. SIVELEVETT'S FRAME WORKS, Whitneyville, Ct.

BEE SUPPLIES.—Write for prices before buying. We can save you money. We make a specialty of special size hives and frames to order.

THE M. C. SILSBEE Co., Rt. 3, Cohocton, N. Y.

FOR SALE.—One German wax-press in good condition except followers, \$4.00; one old-model two-frame Cowan reversible extractor, fair condition, \$3.00. THE M. C. SILSBEE Co., Rt. 3, Cohocton, N. Y.

QUIN-COMPACTNESS brood-nest is worked while you sit or stand in angles, or sit on super or "wing"—no reaching across the super. See pages 31, 94, and ad. W. F. MCCREADY, Estero, Lee Co., Fla.

FOR SALE.—125 wood-zinc queen-excluders for 10-frame hives; none of them used over three seasons; 18 cts. each, any or all of them. PORTER C. WARD, Rt. 1, Allensville, Ky.

FOR SALE.—About 30 lbs. Root's light brood and 80 lbs. Dadant's medium brood foundation, new, perfect condition, at a good discount. WILMON NEWELL, Gainesville, Fla.

FOR SALE.—200 complete hives with covers and bottom-boards, 10-frame, with all drawn combs; free from disease; factory-made hives; \$2.50 each, complete. GEORGE BRANT, Smithville, Ontario, Can.

FOR SALE.—100 brood-combs in standard wood-spaced Hoffman wired frames, mostly drawn from full sheets, all comparatively free from drone comb; also ten colonies bees; positively no disease. W. V. BINKERD, West Monterey, Pa.

THE ROOT CANADIAN HOUSE, 185 Wright Ave., Toronto, Ont., successors to the Chas. E. Hopper Co. Full line of Root's goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and other bee-journals; Prairie State incubators. Get the best. Catalog and price list free.

FOR SALE.—70 T-tin supers with inside fixtures, used one season; price, \$20.00.
G. L. ALLEN, Ulster, Pa.

FOR SALE.—Friction-top pails, 5-lb. size, per 100, \$4.50; 500, \$21.25; 10-lb. size, per 100, \$6.25; 500, \$30.00. Low prices on other sizes in bulk. Also furnished in reshipping-cases. Shipped from Chicago. A. G. WOODMAN CO., Grand Rapids, Mich.

FOR SALE.—Beekeepers' supplies, such as winter cases, hives, sections, covers, bottoms, bodies, supers, brood-frames of every description, shipping-cases, section-holders, comb foundation, smokers, etc. Get my prices before placing your orders.

R. H. SCHMIDT, Rt. 3, Sheboygan, Wis.

FOR SALE.—At all times, good second-hand empty 5-gallon honey-cans in A-1 condition, packed two in a case, at 25 cts. per case, terms cash, f. o. b. at one of our various factories. NATIONAL BISCUIT COMPANY (Purchasing Department), 409 West 15th St., New York City.

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PATENTS THAT PAY: \$600,812.00 clients made. Protect your idea! Send data. Advice and two wonderful Guide Books free. Highest references.

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Some farmers in this locality have pure-bred eggs; 50 cts. for 15. Write FRED SALZMAN, Bedford, Ill.

BABY CHICKS. Wycoff, and a few of Barrow's choicest. Prices reasonable.

LINESVILLE PULLET HATCHERY, Linesville, Pa.

White Indian Runners and Mammoth White Pekin ducks, range bred, show stock, and prize-winners. Eggs for hatching, \$2.00 for 13. \$4.00 for 30. E. B. BROWN, Box 323, White Plains, N. Y.

Poultry Paper, 44 125-page periodical, up to date, tells you all you want to know about care and management of poultry for pleasure or profit; four months for 10 cts.

POULTRY ADVOCATE, Dept. 56, Syracuse, N. Y.

\$\$\$ IN PIGEONS! Start raising squabs for market or breeding purposes. Make big profits with our Jumbo pigeons. We teach you. Large, free, illustrated, instructive circulars.

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FOR SALE.—Winter-laying White Wyandottes 200-egg strain, built up after years of careful selection and breeding from famous prize-winning stock. Setting eggs, \$1.50 to \$5.00 for 15, according to pen. Day-old chicks, in lots of ten or more, 25 cts. each. Place orders now for early delivery.

C. E. BLANCHARD, Youngstown, Ohio.

WANTS AND EXCHANGES

WANTED.—Bees. OSCAR KAZMEIER, Kiel, Wis.

WANTED.—To buy potatoes in car lots.
F. W. DEAN, New Milford, Pa.

WANTED.—800 Hoffman self-spacing frames, size 18 3/4 x 9 1/4. DARLE HANNA, Brookville, Ind.

TO EXCHANGE.—A camera outfit, size 3 1/4 x 5 1/2, valued at \$45, for honey. D. H. WELCH, Racine, Wis.

WANTED.—100 colonies bees. State condition and cash price. F. W. LINDSLEY, 128 Dartmouth Drive, Toledo, Ohio.

WANTED.—To exchange lath mill and bolter, 24-inch attrition feed-grinder, Economist steam boiler, 12-h.p., for machinery to make honey-sections or engine lathe. GEO. RALL MFG. CO., Galesville, Wis.

Will exchange a seven-jewel Elgin watch for extractor, honey, or bee-supplies. Some bee books cheap. EMIL E. NELSON, Rt. 2, Renville, Minn.

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1916. Our catalog and price list will be mailed to you free. Order early and get the discounts.

C. E. SHRIVER, Boise, Idaho.

REAL ESTATE

FOR SALE.—80-acre farm, 150 colonies bees, 460 supers combs; 8-frame extractor; engine, saw-rig; everything ready for season of 1916, for only \$5000, half cash. HUGHES BEE FARM, Foley, Minn.

Business interests North compel me to sacrifice the prettiest residence in beautiful Melbourne, Fla. Modern, seven rooms, bath, lovely lawn. Apply for particulars, Box 106, Melbourne, Fla. 69926

FOR SALE.—In land of sunshine and flowers, a home of nearly two acres; 30 bearing citrus trees, seven years old; eight-room house. Good location for small bee-yard, also poultry. Write for particulars. J. B. HERR (Owner), Melbourne, Fla

SOUTHERN LANDS are low in price, but high in productive value, make two to four crops a year, and give largest profits in grain, vegetables, fruits, live stock, and dairying. Unsurpassed climate, good markets. Publications on request.

M. V. RICHARDS, Commissioner,
Room 27, Southern Railway, Washington, D. C.

You'd LIKE IT IN NORTH CAROLINA, MARYLAND, OR VIRGINIA. Farm Lands \$15.00 per acre up. Easy terms. On railroad, near market. Write for list. Mild summers, short winters, good markets. If you will send names of two friends interested in The South, will send you a year's subscription free to Southern Homeseeker. Write F. H. LABAUME, Agr. Agt. Norfolk & Western Rwy., 246 N. & W. Bldg., Roanoke, Va.

FOR SALE.—Ideal home for beekeeper; new seven-room frame house; three acres of best garden land in Huron Co. Ideal new concrete bee-cellar, 14 x 24. Honey-house 14 x 24; 25 strong colonies; bees in 8-frame Langstroth hives; 2000 bee-feeders; 4-frame Root automatic extractor, uncapping-can; 300 8-frame Langstroth hives, new, and all necessary appliances to operate an apiary for extracted honey. One of the best locations in Michigan. Will sell bees and supplies separate to suit purchaser. Will sell at a bargain. Write to MRS. J. E. HEBERT, Bad Axe, Michigan.

MISCELLANEOUS

Maple syrup in 6-gal. lots at \$1.15; larger lots, lower price. L. W. KELLOGG, Rt. 1, Sharon Center, O.

ROSELLE, "Florida Cranberry." Seed and magazine 3 mos., 15 cts. FULFORD FARMER, Fulford, Fla.

SEED CORN.—Highest germination; best varieties other farm seed; 1200 acres; 40-page catalog.
W. N. SCARFF, New Carlisle, Ohio.

WAIT! Before ordering, get our 1916 pure-seed book, printed in four colors; describes our Royal Purple Grand Champion Pure Tested field, vegetable, and flower seeds, fruit-trees, vines, shrubs; plants at lowest wholesale cut prices.

GALLOWAY BROS., Waterloo, Iowa.

PURE MAPLE SYRUP.—I am now booking orders for best maple syrup, made from sap of the rock maple, at the following prices: 1 to 4 cases, \$7.20 per case; 5 to 20 cases, \$6.60 per case. Put up in new gallon cans, 6 cans to case. We shall probably be making maple syrup by the time this ad. reaches its readers.

C. C. PARKHURST,
Rt. 1, Phalanx Station, Ohio.

Seed Oats and Potatoes. Pedigreed 7009, Sixty-day oats. Very early. Heavy yielding. \$1 per bu.; 10 bu., 75c. Hill selected Sir Walter Raleigh potatoes, \$1.50 per bu.; 10 bu., \$1.35; 25 bu., \$1.25, f. o. b. Medina. Sacks free. ABBOTT & BAIRD, Medina, O.

FOR SALE OR TRADE.—One L. C. Smith & Bros. No. 5 typewriter, used very little; all right in every way, and good as new. Will sell for cash or trade for eight-frame Dovetailed hive-bodies, new, in flat, or nailed second-hand in good condition.

GEO. H. FREY, Center Point, Iowa.

Choice Santa Clara Valley dried fruit from grower to consumer at following prices, f. o. b. Saratoga: Prunes, 10-lb. sack, \$1.10; apricots, 10-lb. sack, \$1.35. Maximum express rate on dried fruit, 4 cts. per pound in U. S., except points served *only* by Southern Express Co. Mr. E. R. Root has visited our ranch, recommends our product, and vouches for our reliability. HERMAN A. CLARK, Saratoga, Santa Clara Co., Cal.

As I expect to do no more advertising this season I take this occasion to say that I have received several shipments of fur having no inside tags, and the outside tags of which have been so badly defaced that it was impossible to tell from whom they came. If any subscribers of GLEANINGS have sent me fur and have not yet received settlement I should appreciate it if they would advise me, when they can identify the fur, and I will remit at once.

GEO. E. KRAMER, Valencia, Pa.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. JAY SMITH, 1159 D. Wolf St., Vincennes, Ind.

FOR SALE.—200 colonies of bees; 5 acres land with orchard. N. L. ANDERSON, box 386, Spearfish, S. D.

FOR SALE.—Fifty colonies of bees.

J. R. MARVE, Bunceton, Mo.

FOR SALE.—175 colonies of bees with good location. F. M. SNIDER, Collbran, Col.

FOR SALE.—75 colonies of bees. No disease. Write J. H. and J. T. CLARK, Munford, Ala.

FOR SALE.—600 colonies well-kept bees. All modern equipment. Write WM. CRAVENS, Rt. 7, San Antonio, Texas.

Write us for our prices on Italian queens and bees by the pound. Are prepared to take care of you. R. V. & M. C. STEARNS, Brady, Tex.

FOR SALE.—32 good colonies of bees, and complete outfit for producing comb and extracted honey. E. W. PALMER, Catskill, N. Y.

FOR SALE.—At a bargain, 100 colonies. Good location. Full sheets. Up-to-date outfit for extracted honey. "BEE MAN," Williamsport, Pa. 18626

FOR SALE.—We offer to some one in this or a nearby state 50 to 300 colonies, 8-frame, first class. THE E. F. ATWATER CO., Meridian, Idaho.

FOR SALE.—Three-banded Italian queens for season of 1916. Watch for large ad. with prices later. N. FOREHAND, Ft. Deposit, Ala.

Northern-bred Italian queens, untested, \$1.00; select tested, \$1.50. Bees by pound. Safest plans. "How to Introduce Queens, and Increase," 25 cts. List free. E. E. MOTT, Glenwood, Mich.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5. WM. S. BARNETT, Barnetts, Va.

FOR SALE or will take partner that is willing to go half, 120 colonies Italian bees, house, tools, empty hives, 160 acres land, homesteading, well, \$1000 or go half. J. C. HICKSON, Bisby, Ariz.

Three-banded Italians, ready May and June, \$1.00 each; 6 for \$5.00; 12 for \$9.00; after June, 75 cts. each; 6 for \$4.25; 12 for \$8.00. For larger lots write CURD WALKER, Jellico, Tenn.

Now booking orders for three-frame nuclei Italian bees and tested queen; delivery June 1, \$4 each. Low freight, quick delivery, satisfaction.

S. G. CROCKER, JR., Roland Park, Md.

Italian bees, Moore's strain, in new 10-frame dov. hives, painted white, in good condition; warranted free from disease; \$6.50 per colony. Safe delivery guaranteed. N. P. ANDERSON, Eden Prairie, Minn.

FOR SALE.—Good Italian queens, untested, 75 cts.; tested, \$1.00; nuclei, 2 frames, \$3.00; 1-lb. package, \$2.00; 2-lb. package, \$3.00, with untested queen. Will be ready to send out about April 1.

G. W. MOON, 1904 Park Ave., Little Rock, Ark.

FOR SALE.—50 colonies pure Italian bees, mostly 10-frame; few double-wall, \$4.50 per hive if taken by March 15. Supplies cheap, such as hive-bodies and supers, with drawn comb. Write soon.

R. J. MARTINS, box 135, Afton, Okla.

FOR SALE.—Three-banded Italian queens. Nuclei a specialty. Bees by the pound. My stock will please you as it has others. Let me book your order for spring delivery. Write for circular and price list. J. L. LEATH, Corinth, Miss.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. BROCKWELL, Barnetts, Va.

FOR SALE.—Italian bees, 1 lb. with queen, \$2.25; 1 frame with queen; \$2.00. Queens, 75 cts. each. Safe delivery guaranteed; 30-page catalog with beginner's outfit for stamp. THE DEROY TAYLOR CO., Newark, N. Y. (formerly Lyons).

BEES.—250 colonies and equipment, near Sacramento. No disease. Also 40-acre mountain ranch in Sonoma Co., with virgin redwood trees up to 8 feet in diameter; sell separately, or both for \$1600. E. L. SECHRIST, Fair Oaks, Cal.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. PHELPS & SON, Wilcox St., Binghamton, N. Y.

FOR SALE.—Northern-Ontario-Bee-Diseaseless District Bees. Hardest, healthiest. Prices will suit you. Write now to B. F. JOHNSON, 7901 Franklin Ave., Cleveland, O.; after April 1 to RAHN BEE AND HONEY CO., Haileybury, Ont.

Indianola Apiary offers bees and queens for sale for 1916 as follows: Tested queens, \$1.25; untested, 75 cts.; 1 lb. of bees, \$1.00; one-frame nucleus, \$1.25. Add price of queen if wanted.

J. W. SHERMAN, Valdosta, Ga.

M. C. Berry & Co., successors to Brown & Berry, are booking orders for spring delivery. This firm is the largest and most successful shipper of Select Bred Three-banded Italian queens and bees in packages in the South. Write for circular and price list. M. C. BERRY & Co., Hayneville, Ala.

We are booking orders for bees in 2-lb. packages, \$1.75; and 3-lb. packages, \$2.50. Young untested Italian queens, 75 cts. each, or \$8.00 per dozen. Bees are free from disease, and safe delivery guaranteed. Orders delivered after April 20. Write for circular. IRISH & GRESSMAN, Jesup, Ga.

Carniolan, Golden, and three-banded Italian queens. Tested, \$1.00 each; 6, \$5.40; untested, 75 cts. each; 6, \$4.20. Bees, 1 lb., \$1.25; 2 lbs., \$2.25. Nuclei, per frame, \$1.25; two-frame, \$2.25; eight-frame hive, \$6.50; ten-frame hive, \$7.00. Write for price on large orders. Everything guaranteed to reach you in good order. No disease here. Cash must accompany your order. Please mention GLEANINGS. I. N. BANKSTON, box 135, Buffalo, Texas.

Bees by the pound shipped anywhere in the U. S. or Canada. Safe arrival guaranteed. Capacity, 100 lbs. a day. M. C. BERRY & Co., Hayneville, Ala.

I am now booking orders for golden and three-banded Italian queens. Early delivery. Write for prices. D. L. DUTCHER, Bennington, Mich.

FOR SALE.—75 colonies of hybrid bees in 8 and 10 frame hives. Price \$375; with all modern apary equipment, \$500; will sell bees without equipment. NILES HILLMAN, Greenwich, N. Y.

A few choice three-banded Italian queens for early delivery. Booking orders now. Tested queens, \$1.50 each; breeders, \$5.00 to \$10. Untested, after April 1 to 15, \$1 each. O. E. MILAM, Moore, Tex.

FOR SALE.—Young tested Italian queens, reared late last fall. These we offer for only \$1.00 each as long as they last if taken by April 15. They are beautiful queens and will give you satisfaction. We offer them at this low price in order to move them to make room in our nuclei for queen-cells in early spring. M. C. BERRY & Co., Hayneville, Ala.

Having secured breeders of Dr. Miller, we are offering daughters of his famous strain of Italians at the low price of \$1.50 each. Queens of our own strain at 75 cts. each; 1 lb. of bees, \$1.50; 2-frame nuclei, \$2.25; full colony in 8-frame hive at \$6.50; 10-frame, \$7.50; 200 colonies for spring delivery at \$6.00 each, 10-frame hives.

THE STOVER APIARIES, Mayhew, Miss.

FOR SALE.—Three-banded Italian bees. Three-frame nuclei, with queen, \$3.00; without queen, \$2.25. We have more bees than we can manage, and can, therefore, supply you with the biggest and strongest nuclei you will be able to find anywhere. Send your order now, and money when you want them shipped. Can begin shipping April 15, or earlier if necessary.

THE HYDE BEE CO., Floresville, Tex.

QUEENS.—Italians exclusively; golden or leather-colored. One select, untested, \$1.00; 6, \$4.25; 12, \$8.00. Tested, \$1.25. Best breeder, \$5.00. Early swarms of young bees in light screen cage a specialty. One 1-lb. package, \$1.25; one 2-lb., \$2.25; queen extra. For ten or more, write for price. Also nuclei and full colonies. I am booking orders now, with 10 per cent deposit for delivery March 15 and after. Safe arrival, prompt service, and satisfaction guaranteed. Circular free.

J. E. WING, 155 Schiele Ave., San Jose, Cal.

FOR SALE.—1-lb. swarm (shipping weight 3 lbs.) Italian bees, \$1.50, without queen, March 20 or later. Untested Italian queen, 75 cts. after April 10; tested Italian queen, \$1.25 after March 20. No reduction for less than 50; 1 to 49 2-lb. bees in package, no queen, \$2.50 each; 50 to 500 2-lb. bees in packages, no queen, \$2.37. Bred from best honey-gatherers; no disease. Safe arrival and satisfaction guaranteed. We are now booking orders with ¼ payment, balance before shipment. "The early swarms get the honey." We can care for your wants for 1916. W. D. ACHORD, successful package shipper and queen-breeder, Fitzpatrick, Ala., U. S. A.

FOR SALE.—Italian bees by the pound, and select-bred Italian queens. One-pound swarms without queens, \$1.25 each; 2-lb. swarms without queens, \$2.35 each; 3-lb. swarms without queens, \$3.35 each, and 5-lb. swarms without queens, \$5.35 each. If queens are wanted with swarms, add price as according to price list below. Untested, warranted purely mated queens, 75 cts. each; tested queens, \$1.25 each. All queens are bred according to our plan of breeding only from colonies or queens of the highest standard—those that have made the best record in pounds of honey. These select colonies are the choice of over 1000 hustling honey-producing colonies. Every queen we warrant to be purely mated or we replace her, free of charge. Every pound of bees we guarantee to deliver alive and in good shape, and full weight. We have no disease. Safe arrival and satisfaction we guarantee on both queens and bees in packages. For wholesale prices on either queens or bees by the pound write us. Let us book your order now. Only a small payment down required. M. C. BERRY & Co., Hayneville, Ala.

FOR SALE.—25 colonies of Italian bees, frames wired, combs built on full sheets of foundation; 8-fr. colonies, \$5; 10-fr., \$6, with queen. HENRY SHAFFER, 2860 Harrison Ave., Cincinnati, O.

HELP WANTED

WANTED.—An experienced apiarist. State wages, experience, and give references as to ability. Board furnished. THE STOVER APIARIES, Mayhew, Miss.

WANTED.—Man, single preferred, to take charge of apary, 200 hives, and assist in orchard work. HAWTHORNE FARMS CO., Barrington, Ill.

WANTED.—Two young men to help in the apiaries for 1916; prefer young men who want to learn the bee business and are willing to work for reasonable wages and board. I want no one who smokes. Address P. O. Box 124, Wapato, Wash. 12658

WANTED.—Experienced beeman familiar with conditions in Georgia or Florida, to handle 75 to 100 colonies, on share basis. Can be employed in orange-grove work, regular terms, when not busy with bees. Good opening for the right man. References required. Box 896, Sanford, Fla.

HELP WANTED.—Can take two clean minded and bodied young men as student help for the season of 1916. Board free for help given, and something more if a good season and help does well. One understanding an auto preferred. Address R. F. HOLTERMANN, Brantford, Ontario, Canada.

WANTED.—Young man with a little experience; fast willing worker—as student helper in our large bee business of over 1000 colonies; crop last year over 105,000 lbs. Will give results of our long experience, and small wages; every chance to learn. Give age, height, weight, experience, and wages, all in first letter, or expect no answer.

E. F. ATWATER, Meridian, Idaho.

SITUATIONS WANTED

Single man, age 29, beekeeper, wants position in apary. No bad habits. All letters answered. M. MCLOVICH, Box 243, Rock Springs, Wyo.

Young married man desires position, thoroughly experienced poultryman and beekeeper, also understands farm work; references given.

PAUL S. PATTERSON, Rt. 2, Horseheads, N. Y.

Experienced honey-producer and helper wants to work bees on shares this spring. Nothing less than 200 colonies in good section considered. Write H 6268, care of GLEANINGS, Medina, Ohio.

BEEKEEPERS' DIRECTORY

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York.

Nutmeg Italian queens, leather color, \$1.00; 12 for \$10.00, return mail.

A. W. YATES, 3 Chapman St., Hartford, Ct.

QUIRIN's superior northern-bred Italian bees and queens are hardy, and will please you. More than twenty years a breeder. Orders booked now. Free circular. H. G. QUIRIN, Bellevue, Ohio.

QUEENS.—Improved three-banded Italians bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, \$8.00; select, \$1.00 each; dozen, \$10.00; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.

You can have your beeswax made into best quality foundation; also the wax from old combs or slumgum. We get it all out. On shares or very cheap for cash. New factory. Old liberal terms. Cheapest and handiest transportation for all Northern beekeepers. You always get your own wax back. J. J. ANGUS, 454 Fulton St., Grand Haven, Mich.

Convention Notices

STATE BEEKEEPERS' ASSOCIATION TO MEET AT LANCASTER.

The annual meeting of the Pennsylvania State Beekeepers' Association will be held in the Chamber of Commerce Building, Lancaster, on Friday and Saturday, March 3 and 4. Arrangements have been made by the Secretary, Professor H. C. Klinger, of Liverpool, Pa., and the President, Professor H. A. Surface, Harrisburg, to have a complete program, by scientific and practical beekeepers, that will be interesting to all persons who keep bees, or contemplate doing so. There will be discussions of methods of handling bees to get the best returns, methods of producing comb honey, methods of producing extracted honey, methods of treating bee diseases, and an address by President Surface on "The Habits of the Honeybee."

The Pennsylvania State Beekeepers' Association is the next to the largest beekeepers' organization in America. It has accomplished a great deal of good for the beekeepers and fruit-growers, and has secured legislation and appropriations for the inspection of bee diseases. This work has already resulted in eliminating the dreaded diseases of bees in several counties. The State Bee-inspector will be present and tell something about this service. There will be a full discussion of the State law in regard to marking honey sections, and future legislation will be decided.

Governor Brumbaugh and Secretary of Agriculture Charles E. Patton have been invited to attend. The meeting will be open to the public, and there will be exhibitions of honey, bees, bee products, and bee fixtures. Persons desiring to contribute to these exhibitions are invited to bring their products, supplies, or specimens with them.

PROGRAM

BEEKEEPERS' WEEK, MARCH 13 TO 18, 1916,
MICHIGAN AGRICULTURAL COLLEGE, EAST LANSING.
MONDAY, MARCH 13.

- 12:40 P. M., Beekeeping as an Occupation,
F. Eric Millen,
State Inspector of Apiaries.
1:35, First Steps in Beekeeping,
F. Eric Millen
2:30, Apparatus,
F. Eric Millen
3:25, Assembling Supplies.

TUESDAY, MARCH 14.

- 8:00 A. M., General Discussion.
8:55, The Colony and its Organization,
F. Eric Millen
9:50, The Cycle of the Year,
Ira D. Bartlett,
East Jordan, Mich.
10:45, History of Hives and Frames,
F. Eric Millen

12:45 P. M., Life History of Queen and Drone,
F. Eric Millen

- 1:35, Life History of Worker, Morley Pettit,
Provincial Apiarist, Guelph, Can.
2:20, Comb Foundation, Manufacture and
Use, F. Eric Millen
3:25, Assembling Supplies,

WEDNESDAY, MARCH 15.

- 8:00 A. M., General Discussion.
8:55, Races of Bees, Morley Pettit
9:50, Artificial Increase—Use and how
Made, Ira D. Bartlett
10:45, Relation of Beekeeping to Fruit-grow-
ers, F. Eric Millen
12:40 P. M., Home Manufacture of Bee-supplies,
Ira D. Bartlett
1:35, A Beginner's Outfit, Morley Pettit
2:20, Anatomy of the Honeybee,
F. Eric Millen
3:25, Assembling Supplies.

THURSDAY, MARCH 16.

- 8:00 A. M., General Discussion.
8:55, Making a Start with Bees, Morley Pettit
9:50, The Manipulation of Bees,
F. Eric Millen
10:45, The Production of Extracted Honey,
Ira D. Bartlett
12:40 P. M., Spring Management, F. Eric Millen
1:25, The Production of Comb Honey,
Morley Pettit

- 2:20, Wax Production and Comb Building,
F. Eric Millen
3:25, Selecting a Location for Beekeeping,
Ira D. Bartlett

FRIDAY, MARCH 17.

- 8:00 A. M., General Discussion.
8:55, The Causes of Swarming, Morley Pettit
9:50, The Prime Swarm and its Location,
F. Eric Millen
10:45, Methods and Principles of Swarm
Prevention, Ira D. Bartlett
12:40 P. M., Taking off Extracted Honey and Ex-
tracting, Morley Pettit
1:25, Bee Diseases, Symptoms and Treat-
ment, F. Eric Millen
2:20, Requeening and Introducing a Queen,
Morley Pettit
3:25, Assembling Supplies.

SATURDAY, MARCH 18.

- 8:00 A. M., General Discussion.
8:55, Robbing—Symptoms and Control,
F. Eric Millen
9:50, Methods of Queen-rearing,
A. D. D. Wood
10:45, Literature on Beekeeping, F. Eric Millen

ANNUAL BEEKEEPERS' CONVENTION, MASSACHUSETTS
AGRICULTURAL COLLEGE; FARMERS' WEEK—SEC-
TION 8, BEEKEEPING. MARCH 14-16, 1916; ALL
SESSIONS IN ENTOMOLOGY BUILDING, ROOM F,
UNLESS OTHERWISE DESIGNATED.

TUESDAY, MARCH 14.

- 9:10—10:10. Demonstrations:—Methods of winter
protection; the latest winter cases, unit
and multiple; cellar wintering. M. A. C.
beekeeping staff—at the apiary.
10:10—11:00. Demonstrations:—The rendering
process of wax and wax products. B. N.
Gates and J. L. Byard, wax laboratory, base-
ment of entomology building.
11:10—12:00. Demonstration of apparatus on dis-
play. Concessioners and members of M. A.
C. beekeeping staff, beekeeping museum, base-
ment of entomology building.
1:30—2:20. Beekeepers' Round Table.
Spraying practices versus beekeeping.
I. The beekeepers' standpoint, Dr. B. N.
Gates, Associate Professor of Beekeeping,
M. A. C.
II. Chemical evidence that bees may be killed
by arsenical sprays, Dr. E. B. Holland,
Chemist, Experiment Station, M. A. C.
III. The horticulturist's practices in relation
to beekeeping, W. W. Chenoweth, Associate
Professor of Pomology, M. A. C.
IV. The control of insect pests of forests in
relation to beekeeping, A. F. Burgess, in
charge of Moth Work, Gypsy-moth Labora-
tory, U.S.D.A., Melrose Highlands, Mass.
V. Municipal spraying as related to beekeep-
ing, Fred Southard.
VI. Discussion.

WEDNESDAY, MARCH 15.

- 9:10—10:00. How and when to begin beekeeping,
B. N. Gates, M. A. C.
The care of bees in the spring (demonstra-
tion). J. L. Byard, Supt. of Apiary, M.A.C.
10:10—11:00. How I dispose of eight thousand
pounds of honey, A. W. Yates, Hartford, Ct.
11:10—12:00. From among the beekeepers, Mrs. A.
H. McCarter, Springfield, Mass.
Speaker and subject to be announced later.
1:30—2:20. Beekeeping in the counties.
I. Essex County, the original beeyard of the
United States; the future. F. A. Smith,
Director Independent Agricultural School
of Essex County, Hathorne, Mass.
2:30—3:20. II. Bees on the farms in Worcester
County, C. H. White, Manager Worcester
County Farm Bureau, Worcester, Mass.
3:30—4:30. Lines for county work in beekeeping,
III. Beekeeping displays at the fairs, A. W.
Yates, Hartford, Ct.
IV. Sweet clover in Massachusetts, Dr. W.
P. Brooks, Director Experiment Station,
M. A. C.
V. The relation of the county agent to the
beekeepers' society, O. F. Fuller, Black-
stone, Mass.

THURSDAY, MARCH 16.

- 9:10—10:00. Bee diseases. Question-box. Demonstrations will be given, if desired, at the apiary.
- 10:10—11:00. Annual meeting of the Hampshire, Hampden, and Franklin Beekeepers' Association.
- President's address: "Timely Suggestions to Beekeepers," O. N. Smith, Florence, Mass.
- Honey Packages: a Standard, B. N. Gates, M. A. C.

PROGRAM OF THE FIRST ANNUAL BEEKEEPERS' SHORT COURSE GIVEN BY THE WINONA COLLEGE OF AGRICULTURE, WINONA LAKE, IND., MARCH 20 TO 25 INCLUSIVE.

PROGRAM.

MONDAY, MARCH 20, 1916.

- 1:30. Address, Dr. J. C. Breckenridge, President of the Winona College of Agriculture
- 2:00. Beekeeping as an occupation.
- 2:40. Beekeeping apparatus. A laboratory lecture.
- 4:15. Races of bees.
- 6:45. General lecture on bees illustrated with lantern slides.

TUESDAY, MARCH 21.

- 9:25. The cycle of the year in the hive.
- 1:00. Beekeeping in relation to fruit-growing.
- 2:40. Internal anatomy and life processes.
- 4:15. Wax production and comb-building.
- 6:45. The uses of honey in the home.

WEDNESDAY, MARCH 22.

- 9:25. Where and how to begin beekeeping.
- 1:00. The manipulation of bees.
- 2:40. What the State is doing for the beekeeper.
- 4:15. Cellular wintering and spring management.
- 6:45. The evolution of the hive.

THURSDAY, MARCH 23.

- 9:25. Swarm control and increase.
- 1:00. The production of extracted honey.
- 2:40. The marketing of honey.
- 4:15. Methods of queen-rearing and introducing.
- 6:45. Some great men in the beekeeping world.

FRIDAY, MARCH 24.

- 9:25. Fall and winter care of bees.
- 10:15. External anatomy of the honeybee.
- 1:00. Comb-honey production.
- 2:40. Diseases of bees.
- 4:15. Sources of nectar and the location of beeyards.
- 6:45. The robbing of bees.

SATURDAY, MARCH 25.

- 8:00. Food of bees and feeding bees.
- 9:00. How to handle bees.
- 10:00. Does beekeeping pay?
- 11:00. Educational and research agencies related to beekeeping.

An opportunity will be given for asking questions at the end of each lecture period. A quiz on the lectures of each day will be held the following day.

The lectures will be given by members of the faculty of the Winona College of Agriculture, assisted by experts and specialists along certain lines of beekeeping.

The course as above outlined will be one of value, not only to amateurs, but to veterans as well. It is the desire to teach the fundamental principles, for if these are understood, the details will follow easily. Dr. E. F. Phillips' book entitled "Beekeeping" will be used as a guide, and it is urged that each student provide himself with a copy. It is published by the Macmillan Co., New York, and can be secured from them or from any of the publishers of bee-journals, or from the dealers in beekeeping supplies.

Various kinds of hives and equipment will be on hand for examination and demonstration.

Winona Lake is located on the main line of the Pennsylvania lines running between Fort Wayne and Chicago. It is connected with Warsaw by trolley, and may be reached via Warsaw over the Big Four lines or the Winona Interurban railway.

A fee of \$1.00 is payable upon enrollment. Board and room, from \$4.00 to \$5.00 per week. For further information address J. C. BRECKENRIDGE, President.

TRADE NOTES

PASTE TO STICK LABELS ON TIN.

We have had many calls for a reliable paste to make labels stick on tin. We have something which we have used extensively, and find it good. Price in pint tin cans, 25 cents. When sent by mail it would weigh two pounds, and parcel-post rate would be according to zone. Ask your postmaster.

It is with pleasure that we call the attention of our readers to the new catalog gotten out by The Rawlings Implement Co., of Baltimore, Md., manufacturers of farm implements. Anything required by the farmer, from wrenches or fence wire to gasoline-engines or wagons, they can supply at a moment's notice. They have not forgotten to mention bee-supplies either—everything and anything that a farmer can possibly need. We have done business with this firm for years, and have always found them reliable and prompt. They will send their catalog "U" on request.

BEESWAX WANTED.

We are now, as always, in the market for choice pure beeswax. Our present price is 29 cts. in cash or 31 in trade for supplies for pure average beeswax delivered at Medina, or any of our branches east of the Mississippi River.

Commenting on the price we pay for beeswax a correspondent in St. Louis writes recently: "In calling on one of the commission houses yesterday, the manager of the concern commenced a tirade against your good selves, stating that you were offering the beekeeper more money for his wax than they, the commission people, would pay."

In packing your wax for shipment pack it in double sacks. Put a tag in with your name and address and number of pounds you ship. Use no paper or other packing. Boxes or barrels may be used if burlap sacks are not available; but be sure they are securely nailed so they may not be broken open in transit.

A BETTER DORMANT SPRAY.

The scale, blight, canker, etc., are no longer dreaded by those who do careful spraying with any of the several standard spray mixtures, altho some give better results than others with a minimum of labor, and labor is the greatest expense in the spraying game. For this reason, the most desirable spray is the one that will accomplish the most in one operation.

You spray with, say, lime sulphur. If the work is thoroughly done you can hold the minor diseases in check; but there are a number of very serious fungous troubles that are found on the trees in their dormant state that lime sulphur might control if it had the proper powers of penetration; but, unfortunately, it cannot penetrate into the diseased tissues of such troubles as collar rot on apple-trees, apple canker, and the brown-rot spores on peach-trees.

From the foregoing it is apparent that there is a need for a dormant spray that will control all of these pests with a single spraying.

Experiments for the past eleven years have proven that all these diseases can be controlled by the use of a miscible oil known as "Scalecide." In orchards where thoro spraying has been done for years with "Scalecide," various forms of blight and canker have almost entirely disappeared.

The B. G. Pratt Company, 50 Church St., New York, have prepared an interesting booklet, "Proof of the Pudding." They will gladly send this helpful book free on request. Write today for the Department XXX.

A VERY INTERESTING BOOK.

There are probably more fancy chickens raised in the vicinity of Mankato, Minn., than there are in almost any other section of this country. This hobby brought forth a big need for a high-class incubator among those poultry-raisers, and resulted in the establishment of a great incubator-factory at Mankato, known as the Mankato Incubator Co. The president of this company, Mr. F. H. Miller, has written a book on the history and development of the incu-

bator, called "The Story of the Mankato." Mr. Miller is himself a practical poultryman, and knows whereof he speaks. The fact that this machine has made good with the poultry-raisers right at home is sufficient evidence to prove that it will be satisfactory to anybody. This year they are offering a greatly improved type of incubator that should appeal to every progressive poultryman. Detailed information and their interesting book, "The Story of the Mankato," may be obtained by addressing a postal to Mankato Incubator Co., Box 837, Mankato, Minnesota.

THE A. I. ROOT COMPANY, Medina, Ohio.

ON THE BOOKSHELF

Der Gefluegel-Zuechter

Those who are interested in reading German publications printed in the United States in the German language may not be aware that there is a German poultry journal published at Hamburg, Wisconsin, said to be the only paper of the kind issued in this country. The purpose of *Der Gefluegel-Zuechter* is to be of service to all Germans who are raising poultry, pigeons, rabbits, and other pet stock. The publishers have spent about twenty-five years trying to create a wider interest in poultry-raising among the Germans of this country.

The eighteenth annual year book, *The "Jahrbuch" for 1916*, has recently been issued. The publishers of *Der Gefluegel-Zuechter*, Hamburg, Wis., will gladly answer any inquiries about combination price of the publication and "Jahrbuch," or will quote subscription rate on the paper alone.

Simplified Beekeeping

Already looking forward to the time when, after the close of the war, England will attempt to become more self-supporting for her food supply, a new manual of beekeeping has been published to encourage beekeeping in the British Isles. Mr. William Herrod-Hempsall, author of "Producing, Preparing, Exhibiting, and Judging Bee Produce," and junior editor of the *British Bee Journal*, has just written and published a little manual entitled "Beekeeping Simplified for the Cottager and Small Holder."

The book does not attempt to be an exhaustive treatise on the subject, but to give concise rules and explanations for the simple operations in the apiary. It furnishes a very good introduction to more advanced methods. Just like other texts on apiculture, the book opens with a short account of the life of the bee and the curious economy of the colony. Then the author discusses hive and tools, with directions for their use, and finally such matters as marketing, wintering, and diseases.

For one who wishes to keep in touch with the latest British methods, the little work is

well adapted; and it is hard to see how any progressive beekeeper in England can get along without it. Its small size and elementary nature well adapt it to the beginner's use universally. There are 48 pages and a large number of illustrations. The printing has been very successfully done.

"Beekeeping Simplified," by William Herrod-Hempsall, F.E.S. Simpkin, Marshall, Hamilton, Kent, and Co., London, 6d. The book may be secured from the *British Bee Journal*, London, for 12 cents; postage 4 cents.

IS BILLY SUNDAY A GRAFTER?

They hate him that reproveth in the gate, and they abhor him that speaketh uprightly.—AMOS 5:10.

In a hotel recently a traveling man said, "Billy Sunday is a grafter—that is all." A man stepped up to him and said, "What is that?" The traveling man repeated the statement. "Can you prove that?" was the next question. "Why," said the traveling man, "everybody knows it." "Well," said the other, "that may be true. I will give you \$5000 to prove it, however." "Who are you?" asked the traveling man; "one of Sunday's kind?" "No," was the reply; "I am a salesman for a brewery. Billy Sunday is doing our business great harm, and my people will gladly give \$5000 to show him up if he's a grafter, and to stop the harm he is doing our business."—From *Civic League Record*, reported in *The Sunday School Times*.

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Mr. B. I. Solomon, who is now in charge, has been with The A. I. Root Company for some years and knows their method of doing business.

We intend to carry a large and complete stock of supplies, and we also have our Weed foundation machines in shape to care for all orders promptly.

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